

**0072795**

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**FLUOR**

**Memorandum**

M4W41-SLF-07-183

To: D. L. Klages H8-40 Date: March 30, 2007

From: S. L. Fitzgerald, Manager *S. L. Fitzgerald*  
WSCF Analytical Chemistry

cc: w/Attachments  
T. F. Dale S3-30 J. E. Trechter S3-30  
H. K. Meznarich S3-30 D. D. Wright S3-30  
P. D. Mix S3-30 File/LB  
S. J. Trent A0-21

Subject: FINAL RESULTS FOR 200-CW-3 OPERABLE UNIT TEST PIT – SAMPLE DELIVERY  
GROUP WSCF20070354 – SAF NUMBER R07-007

Reference: (1) 200-CW-3 Operable Unit Support Activities Sampling – Letter of Instruction, D&D-31890, Rev. 0, dated February 16, 2007  
(2) HNF-SD-CD-QAPP-017, Rev. 8, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF20070354:

- Cover Sheet (Attachment 1)
- Narrative (Attachment 2)
- Analytical Results (Attachment 3)
- Sample Receipt Information (Attachment 4)

SLF/grf

Attachments 4

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**M4W41-SLF-07-183**

**ATTACHMENT 1**

**COVER SHEET**

Consisting of 2 pages  
Including cover page

# WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20070354  
Data Deliverable Date: 19-mar-2007  
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
R07-007	B1ML84	W070000246	SOIL
	B1ML85	W070000247	SOIL
	B1ML86	W070000248	SOIL
	B1ML87	W070000249	SOIL
	B1ML88	W070000250	SOIL
	B1ML89	W070000251	SOIL
	B1ML90	W070000252	SOIL
	B1ML98	W070000254	SOIL
	B1MLB0	W070000253	SOIL

**M4W41-SLF-07-183**

**ATTACHMENT 2**

**NARRATIVE**

Consisting of 4 pages  
Including cover page

<b>Sample Delivery Group</b>	<b>WSCF20070354</b>
<b>Sample Matrix</b>	<b>SOLID</b>
<b>Sample Visual</b>	<b>N/A</b>
<b>SAF Number</b>	<b>R07-007</b>
<b>Data Deliverable</b>	<b>Summary Report</b>

### Introduction

Nine (9) soil samples (see Attachment 1) from the 200-CW-3 Operable Unit Test Pit were received at the WSCF Laboratory on March 2, 2007. The samples were received in a cool condition with ice present in the coolers. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *200-CW-3 Operable Unit Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and sample receipt are included as Attachment 4.

### Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report*, pages 77 through 79, for a complete listing of approved analytical methods used.

### Organic Comments

Sample results are moisture corrected and reported on dry weight basis.

**PCBs** – The holding time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this analytical batch of less than 20 samples. See pages 19 through 21 for QC details. All QC controls are within the established limits.

### Inorganic Comments

**ICP-MS Metals** – The holding time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this analytical batch of less than 20 samples. See pages 40 through 44 for QC details. Analytical Notes:

- Thorium results listed in the report represent Th-232 exclusively.
- Manganese Matrix Spike Duplicate recovery outside of acceptance limits. Analytical data received an "N" flag.

All other QC controls are within the established limits.

**Hexavalent Chromium** - The holding time for this analysis was met. A Blank, Laboratory Control Sample, Sample Duplicate, Matrix Spike and Matrix Spiked Duplicate were analyzed with this analytical batch of less than 20 samples. See page 39 for QC details. All QC controls are within the established limits.

**Percent Solids** – analyzed for organic moisture correction.

#### **Radiochemistry Comments**

There are no holding times associated with WSCF radiochemical methods.

**Plutonium Isotopic** - A Blank, Laboratory Control Sample and Sample Duplicate were analyzed with this analytical batch of less than 20 samples. See pages 68 through 69 for QC details. All QC controls are within the established limits.

**Amercium-241** – A Blank, Laboratory Control Sample and Sample Duplicate were analyzed with this analytical batch of less than 20 samples. See pages 63 through 64 for QC details.  
Analytical notes:

- Sample duplicate had Relative Percent Duplication out of normal control limits, however the sample activity is low which prevents RPD limits from being applied.

All QC controls are within the established limits.

**Uranium Isotopic** – A Blank, Laboratory Control Sample and Sample Duplicate were analyzed with this analytical batch of less than 20 samples. See page 74 through 75 for QC details.

- Uranium-235 duplicate had Relative Percent Duplication out of normal control limits; however, the sample activity is low which prevents RPD limits from being applied.

All QC controls are within the established limits.

**Technetium-99** - A Blank, Laboratory Control Sample, Matrix Spike and Sample Duplicate were analyzed with this analytical batch of less than 20 samples. See page 72 for QC details.  
All QC controls are within the established limits.

**Gamma Energy Analysis (GEA)** – A Blank, Laboratory Control Sample and Sample Duplicate were analyzed with this analytical batch of less than 20 samples. See pages 65 through 67 for QC details. Analytical Notes:

- Pb-214, Bi-214 and Ra-226 Duplicate RPDs are outside the acceptance limits due to sample in homogeneity.
- Bi-212 RPD is outside acceptance limits, but low sample activity prevents RPD limits from being applied.

All other QC controls are within the established limits.

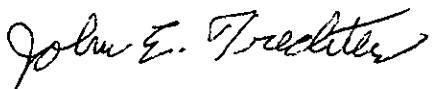
**Strontium - 89/90** - A Blank, Laboratory Control Sample and Sample Duplicate were analyzed with this analytical batch of less than 20 samples. See pages 70 through 71 for QC details. All QC controls are within the established limits.

**Tritium** - A Blank, Laboratory Control Sample, Matrix Spike and Sample Duplicate were analyzed with this analytical batch of less than 20 samples. See page 73 for QC details.

- Laboratory Control Standard outside laboratory limits, however it is within the client required limits.

All QC controls are within the established limits.

This Summary Report is in compliance with the SOW, both technically and for completeness. Release of the data contained in this hard copy report has been authorized by the WSCF Laboratory Analytical Manager and Client Services, as verified by the following signature.



John E. Trechter  
WSCF Client Services

**M4W41-SLF-07-183**

**ATTACHMENT 3**

**ANALYTICAL RESULTS**

Consisting of 77 pages  
Including cover page

**WSCF**  
**ANALYTICAL RESULTS REPORT**

for

**PROJECT HANFORD MANAGEMENT COMPANY  
RICHLAND, WA 99354**

**Attention: DL KLAGES**

Analytical: S. Fitzgerald 3/30/07

Client Services: John Pouchter John Trechter 3/30/07

*All results are reported on an "as received" basis unless otherwise noted in the comment section.*

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Report#: WSCF20070354

Report Date: 30-mar-2007

Report WGPP/ver. 5.2

PROJECT HANFORD MANAGEMENT COMPANY

Page 1

**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000246  
 Client ID: B1ML84

Group #: WSCF20070354  
 Department: Organic  
 Sampled: 03/01/07  
 Received: 03/02/07

KLAGES  
 WSCF

Matrix: SOIL

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
PCBs complete list Prep											03/05/07
PCBs complete list											
Aroclor-1016	12674-11-2	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1221	11104-28-2	LA-523-427	U	< 21.0	ug/kg			1.00	21		03/07/07
Aroclor-1232	11141-16-5	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1242	53469-21-9	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1248	12672-29-6	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1254	11097-69-1	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1260	11096-82-5	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1262	37324-23-5	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1268	11100-14-4	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(org)

**TP Err=Total Propagated Error**

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\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

Report WGPP/ver. 5.2

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**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000247  
 Client ID: B1ML85

KLAGES  
 WSCF

Matrix: SOIL

Group #: WSCF20070354  
 Department: Organic  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
PCBs complete list Prep											03/05/07
PCBs complete list											
Aroclor-1016	12674-11-2	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1221	11104-28-2	LA-523-427	U	< 21.0	ug/kg			1.00	21		03/07/07
Aroclor-1232	11141-16-5	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1242	53469-21-9	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1248	12672-29-6	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1254	11097-69-1	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1260	11096-82-5	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1262	37324-23-5	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1268	11100-14-4	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000248  
 Client ID: B1ML86

KLAGES  
 WSCF

Group #: WSCF20070354  
 Department: Organic  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Result	Unit	Matrix:	SOIL	DF	MDL	PQL	Analysis Date
											03/05/07
PCBs complete list											
Aroclor-1016	12674-11-2	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1221	11104-28-2	LA-523-427	U	< 21.0	ug/kg			1.00	21		03/07/07
Aroclor-1232	11141-16-5	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1242	53469-21-9	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1248	12672-29-6	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1254	11097-69-1	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1260	11096-82-5	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1262	37324-23-5	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1268	11100-14-4	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07

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PROJECT HANFORD MANAGEMENT COMPANY

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** DL KLAGES  
**SAF Number:**R07-007  
**Sample #** W070000249  
**Client ID:** B1ML87

KLAGES  
WSCF

**Group #:** WSCF20070354  
**Department:** Organic  
**Sampled:** 03/01/07  
**Received:** 03/02/07

**Matrix:** SOIL

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>PCBs complete list Prep</b>											03/05/07
<b>PCBs complete list</b>											
Aroclor-1016	12674-11-2	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1221	11104-28-2	LA-523-427	U	< 22.0	ug/kg			1.00	22		03/07/07
Aroclor-1232	11141-16-5	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1242	53469-21-9	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1248	12672-29-6	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1254	11097-69-1	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1260	11096-82-5	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1262	37324-23-5	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07
Aroclor-1268	11100-14-4	LA-523-427	U	< 11.0	ug/kg			1.00	11		03/07/07

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000250  
 Client ID: B1ML88

KLAGES  
 WSCF

Group #: WSCF20070354  
 Department: Organic  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date										
				SOIL																		
<b>PCBs complete list Prep</b>																						
<b>PCBs complete list</b>																						
Aroclor-1016	12674-11-2	LA-523-427	U	<	11.0	ug/kg			1.00	11		03/07/07										
Aroclor-1221	11104-28-2	LA-523-427	U	<	21.0	ug/kg			1.00	21		03/07/07										
Aroclor-1232	11141-16-5	LA-523-427	U	<	11.0	ug/kg			1.00	11		03/07/07										
Aroclor-1242	53469-21-9	LA-523-427	U	<	11.0	ug/kg			1.00	11		03/07/07										
Aroclor-1248	12672-29-6	LA-523-427	U	<	11.0	ug/kg			1.00	11		03/07/07										
Aroclor-1254	11097-69-1	LA-523-427	U	<	11.0	ug/kg			1.00	11		03/07/07										
Aroclor-1260	11096-82-5	LA-523-427	U	<	11.0	ug/kg			1.00	11		03/07/07										
Aroclor-1262	37324-23-5	LA-523-427	U	<	11.0	ug/kg			1.00	11		03/07/07										
Aroclor-1268	11100-14-4	LA-523-427	U	<	11.0	ug/kg			1.00	11		03/07/07										

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PROJECT HANFORD MANAGEMENT COMPANY

**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000251  
 Client ID: B1ML89

KLAGES  
 WSCF

Group #: WSCF20070354  
 Department: Organic  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Result	Unit	Matrix:	SOIL	DF	MDL	PQL	Analysis Date
<b>PCBs complete list Prep</b>											03/05/07
<b>PCBs complete list</b>											
Aroclor-1016	12674-11-2	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1221	11104-28-2	LA-523-427	U	< 20.0	ug/kg			1.00	20		03/07/07
Aroclor-1232	11141-16-5	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1242	53469-21-9	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1248	12672-29-6	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1254	11097-69-1	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1260	11096-82-5	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1262	37324-23-5	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1268	11100-14-4	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07

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PROJECT HANFORD MANAGEMENT COMPANY

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** DL KLAGES  
**SAF Number:** R07-007  
**Sample #** W070000252  
**Client ID:** B1ML90

KLAGES  
WSCF

**Group #:** WSCF20070354  
**Department:** Organic  
**Sampled:** 03/01/07  
**Received:** 03/02/07

<b>Test Performed</b>	<b>CAS #</b>	<b>Method</b>	<b>RQ</b>	<b>Result</b>	<b>Unit</b>	<b>Matrix:</b>	<b>SOIL</b>	<b>DF</b>	<b>MDL</b>	<b>PQL</b>	<b>Analysis Date</b>
											03/05/07
<b>PCBs complete list</b>											
Aroclor-1016	12674-11-2	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1221	11104-28-2	LA-523-427	U	< 20.0	ug/kg			1.00	20		03/07/07
Aroclor-1232	11141-16-5	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1242	53469-21-9	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1248	12672-29-6	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1254	11097-69-1	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1260	11096-82-5	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1262	37324-23-5	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07
Aroclor-1268	11100-14-4	LA-523-427	U	< 10.0	ug/kg			1.00	10		03/07/07

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**Report WGPP/ver. 5.2**

**PROJECT HANFORD MANAGEMENT COMPANY**

D - Analyte was identified at a secondary dilution factor(inorg)

U - Analyzed for but not detected above limiting criteria(inorg)

**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000253  
 Client ID: B1MLB0

KLAGES  
 WSCF

Group #: WSCF20070354  
 Department: Organic  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Matrix: SOIL	Analysis Date
											PCBs complete list	
PCBs complete list Prep												03/05/07
PCBs complete list												
Aroclor-1016	12674-11-2	LA-523-427	U	< 11.0	ug/kg			1.00	11			03/07/07
Aroclor-1221	11104-28-2	LA-523-427	U	< 22.0	ug/kg			1.00	22			03/07/07
Aroclor-1232	11141-16-5	LA-523-427	U	< 11.0	ug/kg			1.00	11			03/07/07
Aroclor-1242	53469-21-9	LA-523-427	U	< 11.0	ug/kg			1.00	11			03/07/07
Aroclor-1248	12672-29-6	LA-523-427	U	< 11.0	ug/kg			1.00	11			03/07/07
Aroclor-1254	11097-69-1	LA-523-427	U	< 11.0	ug/kg			1.00	11			03/07/07
Aroclor-1260	11096-82-5	LA-523-427	U	< 11.0	ug/kg			1.00	11			03/07/07
Aroclor-1262	37324-23-5	LA-523-427	U	< 11.0	ug/kg			1.00	11			03/07/07
Aroclor-1268	11100-14-4	LA-523-427	U	< 11.0	ug/kg			1.00	11			03/07/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria(inorg)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

*Report WGPP/ver. 5.2*

PROJECT HANFORD MANAGEMENT COMPANY

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**WSCF**  
**ANALYTICAL COMMENT REPORT**

**Attention:** DL KLAGES

**Group #:** WSCF20070354  
**Department:** Organic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		Organics: All results are moisture corrected and reported on a dry weight basis. cgc
			W070000246-253/GEA	batch duplicate is flagged for four nuclides being out of RPD range. Pb214, Bi214, and Ra226 are flagged for poor RPD because the sample is not homogeneous. Bi212 is flagged for poor RPD but the sample activity is low level so the RPD does not apply. lmh
			H-3 LCS	recovery is low but only slightly out of range. Since all the other QC checks came out fine, this batch has been accepted. lmh
			W070000246/U235	duplicate is flagged for poor RPD but the sample activity is low level so the RPD doesn't apply. lmh
			Am241	duplicate is flagged for poor RPD however, the sample activity is low level. RPD does not apply to low level samples with high counting error. lmh

**Lab Areas:** VALGROUP - Group Validation  
LOGSAMP - Login for Sample

VALTEST - Test Validation  
LOGTEST - Login for Tests

TESTDATA - Test Data Entry

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# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20070354

Matrix: SOLID

Test: PCBs complete list

Sample Date: 02/26/07

Receive Date: 02/26/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
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**Lab ID: W070000217**

### BATCH QC ASSOCIATED WITH SAMPLE

MS	Aroclor-1254	11097-69-1	197.89	93.800	% Recov	75.000	125.000				03/06/07
MS	Decachlorobiphenyl	2051-24-3	200.06	94.800	% Recov	50.000	150.000				03/06/07
MS	Tetrachloro-m-xylene	877-09-8	164.67	78.000	% Recov	50.000	150.000				03/06/07
MSD	Aroclor-1254	11097-69-1	209.87	100.000	% Recov	75.000	125.000				03/06/07
MSD	Decachlorobiphenyl	2051-24-3	208.80	99.900	% Recov	50.000	150.000				03/06/07
MSD	Tetrachloro-m-xylene	877-09-8	178.28	85.300	% Recov	50.000	150.000				03/06/07
SPK-RPD	Aroclor-1254	11097-69-1	100.000		RPD			6.398	25.000		03/06/07
SPK-RPD	Decachlorobiphenyl	2051-24-3	99.900		RPD			5.239	20.000		03/06/07
SPK-RPD	Tetrachloro-m-xylene	877-09-8	85.300		RPD			8.941	20.000		03/06/07

**Lab ID: W070000246**

### BATCH QC ASSOCIATED WITH SAMPLE

SURR	Decachlorobiphenyl	2051-24-3	190.18	89.900	% Recov	50.000	150.000				03/07/07
SURR	Tetrachloro-m-xylene	877-09-8	178.28	84.300	% Recov	50.000	150.000				03/07/07

**Lab ID: W070000247**

### BATCH QC ASSOCIATED WITH SAMPLE

SURR	Decachlorobiphenyl	2051-24-3	189.87	90.100	% Recov	50.000	150.000				03/07/07
SURR	Tetrachloro-m-xylene	877-09-8	187.23	88.900	% Recov	50.000	150.000				03/07/07

**Lab ID: W070000248**

### BATCH QC ASSOCIATED WITH SAMPLE

SURR	Decachlorobiphenyl	2051-24-3	207.17	96.900	% Recov	50.000	150.000				03/07/07
SURR	Tetrachloro-m-xylene	877-09-8	189.72	88.700	% Recov	50.000	150.000				03/07/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20070354

Matrix: SOLID

Test: PCBs complete list

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W070000249</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Decachlorobiphenyl	2051-24-3	184.41	84.800	% Recov	50.000	150.000				03/07/07
SURR	Tetrachloro-m-xylene	877-09-8	187.02	86.000	% Recov	50.000	150.000				03/07/07
<b>Lab ID: W070000250</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Decachlorobiphenyl	2051-24-3	194.65	92.100	% Recov	50.000	150.000				03/07/07
SURR	Tetrachloro-m-xylene	877-09-8	171.01	80.900	% Recov	50.000	150.000				03/07/07
<b>Lab ID: W070000251</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Decachlorobiphenyl	2051-24-3	185.57	92.900	% Recov	50.000	150.000				03/07/07
SURR	Tetrachloro-m-xylene	877-09-8	159.27	79.800	% Recov	50.000	150.000				03/07/07
<b>Lab ID: W070000252</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Decachlorobiphenyl	2051-24-3	197.59	98.900	% Recov	50.000	150.000				03/07/07
SURR	Tetrachloro-m-xylene	877-09-8	174.20	87.200	% Recov	50.000	150.000				03/07/07
<b>Lab ID: W070000253</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Decachlorobiphenyl	2051-24-3	196.42	90.100	% Recov	50.000	150.000				03/07/07
SURR	Tetrachloro-m-xylene	877-09-8	194.26	89.100	% Recov	50.000	150.000				03/07/07
<b>BATCH QC</b>											
BLANK	Aroclor-1016	12674-11-2	< 10	n/a	UGKG					U	03/06/07
BLANK	Aroclor-1221	11104-28-2	< 20	n/a	ug/Kg					U	03/06/07
BLANK	Aroclor-1232	11141-16-5	< 10	n/a	ug/Kg					U	03/06/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20070354

Matrix: SOLID

Test: PCBs complete list

Sample Date:  
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD (%)	RPD Limit	RQ	Analysis Date
BLANK	Aroclor-1242	53469-21-9	< 10	n/a	ug/Kg					U	03/06/07
BLANK	Aroclor-1248	12672-29-6	< 10	n/a	ug/Kg					U	03/06/07
BLANK	Aroclor-1254	11097-69-1	< 10	n/a	ug/Kg					U	03/06/07
BLANK	Aroclor-1260	11096-82-5	< 10	n/a	ug/Kg					U	03/06/07
BLANK	Aroclor-1262	37324-23-5	< 10	n/a	ug/Kg					U	03/06/07
BLANK	Aroclor-1268	11100-14-4	< 10	n/a	ug/Kg					U	03/06/07
BLANK	Decachlorobiphenyl	2051-24-3	170.11	85.100	% Recov	50.000	150.000				03/06/07
BLANK	Tetrachloro-m-xylene	877-09-8	171.13	85.600	% Recov	50.000	150.000				03/06/07
LCS	Aroclor-1254	11097-69-1	200.08	100.000	% Recov	70.000	130.000				03/06/07
LCS	Decachlorobiphenyl	2051-24-3	190.84	95.400	% Recov	50.000	150.000				03/06/07
LCS	Tetrachloro-m-xylene	877-09-8	181.47	90.700	% Recov	50.000	150.000				03/06/07

**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000246  
 Client ID: B1ML84

KLAGES  
WSCF

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexavalent Chromium Prep											03/14/07
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	U	<0.10	mg/kg			1.00	0.10		03/15/07
ICP-200.8 MS All possible meta Prep											03/06/07
ICP-200.8 MS All possible meta											
Aluminum	7429-90-5	LA-505-412	D	6.38e+03	mg/kg			1.02	5.12	51.2	03/06/07
Manganese	7439-96-5	LA-505-412	DN	307	mg/kg			1.02	0.102	0.102	03/06/07
Nickel	7440-02-0	LA-505-412	D	8.32	mg/kg			1.02	0.205	0.308	03/06/07
Silver	7440-22-4	LA-505-412	DU	< 0.102	mg/kg			1.02	0.102	0.205	03/06/07
Antimony	7440-36-0	LA-505-412	DU	< 0.308	mg/kg			1.02	0.307	1.54	03/06/07
Barium	7440-39-3	LA-505-412	D	59.8	mg/kg			1.02	0.205	1.02	03/06/07
Beryllium	7440-41-7	LA-505-412	D	0.292	mg/kg			1.02	0.0512	1.02	03/06/07
Cadmium	7440-43-9	LA-505-412	D	0.118	mg/kg			1.02	0.102	0.205	03/06/07
Chromium	7440-47-3	LA-505-412	D	7.37	mg/kg			1.02	0.512	3.59	03/06/07
Cobalt	7440-48-4	LA-505-412	D	7.12	mg/kg			1.02	0.0512	0.102	03/06/07
Copper	7440-50-8	LA-505-412	D	15.8	mg/kg			1.02	0.102	1.02	03/06/07
Vanadium	7440-62-2	LA-505-412	D	41.4	mg/kg			1.02	0.205	2.56	03/06/07
Zinc	7440-66-6	LA-505-412	D	44.1	mg/kg			1.02	0.820	1.54	03/06/07
Lead	7439-92-1	LA-505-412	D	5.53	mg/kg			1.02	0.102	0.256	03/06/07
Mercury	7439-97-6	LA-505-412	DU	< 0.0512	mg/kg			1.02	0.0512	0.205	03/06/07
Molybdenum	7439-98-7	LA-505-412	D	0.232	mg/kg			1.02	0.0512	0.512	03/06/07
Thorium	7440-29-1	LA-505-412	D	2.72	mg/kg			1.02	0.102	0.256	03/06/07
Uranium	7440-61-1	LA-505-412	D	0.426	mg/kg			1.02	0.0512	0.102	03/06/07
Arsenic	7440-38-2	LA-505-412	D	2.23	mg/kg			1.02	0.410	5.12	03/06/07
Selenium	7782-49-2	LA-505-412	DU	< 0.308	mg/kg			1.02	0.307	2.05	03/06/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(org)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

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**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000246  
 Client ID: B1ML84

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
				KLAGES	SOIL							
Thallium	7440-28-0	LA-505-412	DU	<	0.102	mg/kg			1.02	0.102	0.154	03/06/07
Strontium	7440-24-6	LA-505-412	D		19.2	mg/kg			1.02	0.102	0.154	03/06/07
Tin	7440-31-5	LA-505-412	D		0.440	mg/kg			1.02	0.0512	0.256	03/06/07
<b>Total solids</b>												
Total solids	TS	LA-519-412			93.9	Percent			1.00	0.0		03/07/07

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- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000247  
 Client ID: B1ML85

KLAGES  
WSCF

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date										
				SOIL																		
<b>Hexavalent Chromium Prep</b>																						
<b>Hexavalent Chromium</b>																						
Hexavalent Chromium	18540-29-9	LA-265-403	U	<0.10	mg/kg				1.00	0.10		03/15/07										
<b>ICP-200.8 MS All possible meta Prep</b>																						
<b>ICP-200.8 MS All possible meta</b>																						
Aluminum	7429-90-5	LA-505-412	D	6.36e + 03	mg/kg				1.01	5.03	50.4	03/06/07										
Manganese	7439-96-5	LA-505-412	DN	312	mg/kg				1.01	0.101	0.101	03/06/07										
Nickel	7440-02-0	LA-505-412	D	8.39	mg/kg				1.01	0.201	0.302	03/06/07										
Silver	7440-22-4	LA-505-412	DU	< 0.101	mg/kg				1.01	0.101	0.201	03/06/07										
Antimony	7440-36-0	LA-505-412	DU	< 0.302	mg/kg				1.01	0.302	1.51	03/06/07										
Barium	7440-39-3	LA-505-412	D	60.4	mg/kg				1.01	0.201	1.01	03/06/07										
Beryllium	7440-41-7	LA-505-412	D	0.307	mg/kg				1.01	0.0504	1.01	03/06/07										
Cadmium	7440-43-9	LA-505-412	D	0.116	mg/kg				1.01	0.101	0.201	03/06/07										
Chromium	7440-47-3	LA-505-412	D	6.78	mg/kg				1.01	0.503	3.52	03/06/07										
Cobalt	7440-48-4	LA-505-412	D	7.92	mg/kg				1.01	0.0504	0.101	03/06/07										
Copper	7440-50-8	LA-505-412	D	14.2	mg/kg				1.01	0.101	1.01	03/06/07										
Vanadium	7440-62-2	LA-505-412	D	54.8	mg/kg				1.01	0.201	2.52	03/06/07										
Zinc	7440-66-6	LA-505-412	D	45.5	mg/kg				1.01	0.806	1.51	03/06/07										
Lead	7439-92-1	LA-505-412	D	5.13	mg/kg				1.01	0.101	0.252	03/06/07										
Mercury	7439-97-6	LA-505-412	DU	< 0.0504	mg/kg				1.01	0.0504	0.201	03/06/07										
Molybdenum	7439-98-7	LA-505-412	D	0.315	mg/kg				1.01	0.0504	0.504	03/06/07										
Thorium	7440-29-1	LA-505-412	D	2.34	mg/kg				1.01	0.101	0.252	03/06/07										
Uranium	7440-61-1	LA-505-412	D	0.413	mg/kg				1.01	0.0504	0.101	03/06/07										
Arsenic	7440-38-2	LA-505-412	D	2.65	mg/kg				1.01	0.403	5.04	03/06/07										
Selenium	7782-49-2	LA-505-412	DU	< 0.302	mg/kg				1.01	0.302	2.01	03/06/07										

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**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(org)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000247  
 Client ID: B1ML85

KLAGES  
 WSCF

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		TP Err	Unit	DF	MDL	PQL	Analysis Date
				SOIL							
Thellium	7440-28-0	LA-505-412	DU	<	0.101	mg/kg		1.01	0.101	0.151	03/06/07
Strontium	7440-24-6	LA-505-412	D		20.2	mg/kg		1.01	0.101	0.151	03/06/07
Tin	7440-31-5	LA-505-412	D		0.410	mg/kg		1.01	0.0504	0.252	03/06/07
<b>Total solids</b>											
Total solids	TS	LA-519-412			94.4	Percent		1.00	0.0		03/07/07

**MDL=Minimum Detection Limit**

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**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

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**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000248  
 Client ID: B1ML86

KLAGES  
WSCF

Matrix: SOIL

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Hexavalent Chromium Prep</b>											03/14/07
<b>Hexavalent Chromium</b>											
Hexavalent Chromium	18540-29-9	LA-265-403	U	<0.10	mg/kg			1.00	0.10		03/15/07
ICP-200.8 MS All possible meta Prep											03/06/07
ICP-200.8 MS All possible meta											
Aluminum	7429-90-5	LA-505-412	D	5.62e+03	mg/kg			1.03	5.17	51.7	03/06/07
Manganese	7439-96-5	LA-505-412	DN	282	mg/kg			1.03	0.103	0.103	03/06/07
Nickel	7440-02-0	LA-505-412	D	7.57	mg/kg			1.03	0.207	0.310	03/06/07
Silver	7440-22-4	LA-505-412	DU	< 0.103	mg/kg			1.03	0.103	0.207	03/06/07
Antimony	7440-36-0	LA-505-412	DU	< 0.310	mg/kg			1.03	0.310	1.55	03/06/07
Barium	7440-39-3	LA-505-412	D	47.8	mg/kg			1.03	0.207	1.03	03/06/07
Beryllium	7440-41-7	LA-505-412	D	0.284	mg/kg			1.03	0.0517	1.03	03/06/07
Cadmium	7440-43-9	LA-505-412	DU	< 0.103	mg/kg			1.03	0.103	0.207	03/06/07
Chromium	7440-47-3	LA-505-412	D	5.37	mg/kg			1.03	0.517	3.62	03/06/07
Cobalt	7440-48-4	LA-505-412	D	8.01	mg/kg			1.03	0.0517	0.103	03/06/07
Copper	7440-50-8	LA-505-412	D	16.4	mg/kg			1.03	0.103	1.03	03/06/07
Vanadium	7440-62-2	LA-505-412	D	49.2	mg/kg			1.03	0.207	2.58	03/06/07
Zinc	7440-66-6	LA-505-412	D	42.3	mg/kg			1.03	0.827	1.55	03/06/07
Lead	7439-92-1	LA-505-412	D	5.36	mg/kg			1.03	0.103	0.258	03/06/07
Mercury	7439-97-6	LA-505-412	DU	< 0.0517	mg/kg			1.03	0.0517	0.207	03/06/07
Molybdenum	7439-98-7	LA-505-412	D	0.234	mg/kg			1.03	0.0517	0.517	03/06/07
Thorium	7440-29-1	LA-505-412	D	2.20	mg/kg			1.03	0.103	0.258	03/06/07
Uranium	7440-61-1	LA-505-412	D	0.370	mg/kg			1.03	0.0517	0.103	03/06/07
Arsenic	7440-38-2	LA-505-412	D	2.86	mg/kg			1.03	0.414	5.17	03/06/07
Selenium	7782-49-2	LA-505-412	DU	< 0.310	mg/kg			1.03	0.310	2.07	03/06/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(org)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

U - Analyzed for but not detected above limiting criteria(inorg)

Report WGPP/ver. 5.2

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**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000248  
 Client ID: B1ML86

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

KLAGES  
 WSCF

Matrix: SOIL

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Thallium	7440-28-0	LA-505-412	DU	< 0.103	mg/kg			1.03	0.103	0.155	03/06/07
Strontium	7440-24-6	LA-505-412	D	19.3	mg/kg			1.03	0.103	0.155	03/06/07
Tin	7440-31-5	LA-505-412	D	0.410	mg/kg			1.03	0.0517	0.258	03/06/07
<b>Total solids</b>											
Total solids	TS	LA-519-412		92.7	Percent			1.00	0.0		03/07/07

MDL=Minimum Detection Limit

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

RQ=Result Qualifier

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(inorg)

TP Err=Total Propagated Error

U - Analyzed for but not detected above limiting criteria.(org)

DF=Dilution Factor

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

Report WGPP/ver. 5.2

PROJECT HANFORD MANAGEMENT COMPANY

**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number:R07-007  
 Sample #: W070000249  
 Client ID: B1ML87

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

KLAGES  
WSCF

Matrix: SOIL

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Hexavalent Chromium Prep</b>											03/14/07
<b>Hexavalent Chromium</b>											
Hexavalent Chromium	18540-29-9	LA-265-403	U	<0.10	mg/kg			1.00	0.10		03/15/07
<b>ICP-200.8 MS All possible meta Prep</b>											03/06/07
<b>ICP-200.8 MS All possible meta</b>											
Aluminum	7429-90-5	LA-505-412	D	6.50e+03	mg/kg			1.02	5.11	51.1	03/06/07
Manganese	7439-96-5	LA-505-412	DN	299	mg/kg			1.02	0.102	0.102	03/06/07
Nickel	7440-02-0	LA-505-412	D	8.05	mg/kg			1.02	0.204	0.307	03/06/07
Silver	7440-22-4	LA-505-412	DU	< 0.102	mg/kg			1.02	0.102	0.204	03/06/07
Antimony	7440-36-0	LA-505-412	DU	< 0.307	mg/kg			1.02	0.307	1.53	03/06/07
Barium	7440-39-3	LA-505-412	D	73.6	mg/kg			1.02	0.204	1.02	03/06/07
Beryllium	7440-41-7	LA-505-412	D	0.289	mg/kg			1.02	0.0511	1.02	03/06/07
Cadmium	7440-43-9	LA-505-412	D	0.103	mg/kg			1.02	0.102	0.204	03/06/07
Chromium	7440-47-3	LA-505-412	D	7.22	mg/kg			1.02	0.511	3.58	03/06/07
Cobalt	7440-48-4	LA-505-412	D	7.08	mg/kg			1.02	0.0511	0.102	03/06/07
Copper	7440-50-8	LA-505-412	D	15.5	mg/kg			1.02	0.102	1.02	03/06/07
Vanadium	7440-62-2	LA-505-412	D	42.7	mg/kg			1.02	0.204	2.56	03/06/07
Zinc	7440-66-6	LA-505-412	D	40.7	mg/kg			1.02	0.818	1.53	03/06/07
Lead	7439-92-1	LA-505-412	D	5.00	mg/kg			1.02	0.102	0.256	03/06/07
Mercury	7439-97-6	LA-505-412	DU	< 0.0511	mg/kg			1.02	0.0511	0.204	03/06/07
Molybdenum	7439-98-7	LA-505-412	D	0.215	mg/kg			1.02	0.0511	0.511	03/06/07
Thorium	7440-29-1	LA-505-412	D	2.21	mg/kg			1.02	0.102	0.256	03/06/07
Uranium	7440-61-1	LA-505-412	D	0.322	mg/kg			1.02	0.0511	0.102	03/06/07
Arsenic	7440-38-2	LA-505-412	D	2.08	mg/kg			1.02	0.409	5.11	03/06/07
Selenium	7782-49-2	LA-505-412	DU	< 0.307	mg/kg			1.02	0.307	2.04	03/06/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria(inorg)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000249  
 Client ID: B1ML87

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

KLAGES  
 WSCF

Matrix: SOIL

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Thallium	7440-28-0	LA-505-412	DU	< 0.102	mg/kg			1.02	0.102	0.153	03/06/07
Strontium	7440-24-6	LA-505-412	D	19.1	mg/kg			1.02	0.102	0.153	03/06/07
Tin	7440-31-5	LA-505-412	D	0.470	mg/kg			1.02	0.0511	0.256	03/06/07
<b>Total solids</b>											
Total solids	TS	LA-519-412		91.4	Percent			1.00	0.0		03/07/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(org)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

*Report WGPP/ver. 5.2*

**PROJECT HANFORD MANAGEMENT COMPANY**

# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000250  
 Client ID: B1ML88

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

KLAGES  
 WSCF

Matrix: SOIL

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Hexavalent Chromium Prep</b>											03/14/07
<b>Hexavalent Chromium</b>											
Hexavalent Chromium											03/15/07
ICP-200.8 MS All possible meta Prep											03/06/07
Aluminum	7429-90-5	LA-505-412	D	6.74e+03	mg/kg			1.03	5.15	51.6	03/06/07
Manganese	7439-96-5	LA-505-412	DN	338	mg/kg			1.03	0.103	0.103	03/06/07
Nickel	7440-02-0	LA-505-412	D	8.78	mg/kg			1.03	0.206	0.309	03/06/07
Silver	7440-22-4	LA-505-412	DU	< 0.103	mg/kg			1.03	0.103	0.206	03/06/07
Antimony	7440-36-0	LA-505-412	DU	< 0.309	mg/kg			1.03	0.309	1.55	03/06/07
Barium	7440-39-3	LA-505-412	D	63.0	mg/kg			1.03	0.206	1.03	03/06/07
Beryllium	7440-41-7	LA-505-412	D	0.304	mg/kg			1.03	0.0516	1.03	03/06/07
Cadmium	7440-43-9	LA-505-412	D	0.114	mg/kg			1.03	0.103	0.206	03/06/07
Chromium	7440-47-3	LA-505-412	D	8.11	mg/kg			1.03	0.516	3.61	03/06/07
Cobalt	7440-48-4	LA-505-412	D	7.93	mg/kg			1.03	0.0516	0.103	03/06/07
Copper	7440-50-8	LA-505-412	D	13.8	mg/kg			1.03	0.103	1.03	03/06/07
Vanadium	7440-62-2	LA-505-412	D	45.8	mg/kg			1.03	0.206	2.58	03/06/07
Zinc	7440-66-6	LA-505-412	D	43.6	mg/kg			1.03	0.825	1.55	03/06/07
Lead	7439-92-1	LA-505-412	D	5.19	mg/kg			1.03	0.103	0.258	03/06/07
Mercury	7439-97-6	LA-505-412	DU	< 0.0516	mg/kg			1.03	0.0516	0.206	03/06/07
Molybdenum	7439-98-7	LA-505-412	D	0.235	mg/kg			1.03	0.0516	0.516	03/06/07
Thorium	7440-29-1	LA-505-412	D	2.79	mg/kg			1.03	0.103	0.258	03/06/07
Uranium	7440-61-1	LA-505-412	D	0.368	mg/kg			1.03	0.0516	0.103	03/06/07
Arsenic	7440-38-2	LA-505-412	D	2.12	mg/kg			1.03	0.412	5.16	03/06/07
Selenium	7782-49-2	LA-505-412	DU	< 0.309	mg/kg			1.03	0.309	2.06	03/06/07

MDL=Minimum Detection Limit

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

RQ=Result Qualifier

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(org)

TP Err=Total Propagated Error

U - Analyzed for but not detected above limiting criteria.(org)

DF=Dilution Factor

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

U - Analyzed for but not detected above limiting criteria.(org)

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# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** DL KLAGES  
**SAF Number:**R07-007  
**Sample #** W070000250  
**Client ID:** B1ML88

KLAGES  
WSCF

**Group #:** WSCF20070354  
**Department:** Inorganic  
**Sampled:** 03/01/07  
**Received:** 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		TP Err	Unit	DF	MDL	PQL	Analysis Date
				SOIL							
Thallium	7440-28-0	LA-505-412	DU	< 0.103	mg/kg			1.03	0.103	0.155	03/06/07
Strontium	7440-24-6	LA-505-412	D	19.8	mg/kg			1.03	0.103	0.155	03/06/07
Tin	7440-31-5	LA-505-412	D	0.430	mg/kg			1.03	0.0516	0.258	03/06/07
<b>Total solids</b>											
Total solids	TS	LA-519-412		93.5	Percent			1.00	0.0		03/07/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(inorg)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000251  
 Client ID: B1ML89

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix: SOIL		DF	MDL	PQL	Analysis Date							
				Result	Unit											
<b>Hexavalent Chromium Prep</b>																
<b>Hexavalent Chromium</b>																
Hexavalent Chromium	18540-29-9	LA-265-403	U	<0.10	mg/kg		1.00	0.10	03/15/07							
<b>ICP-200.8 MS All possible meta Prep</b>																
<b>ICP-200.8 MS All possible meta</b>																
Aluminum	7429-90-5	LA-505-412	D	72.7	mg/kg		1.01	5.04	50.4							
Manganese	7439-96-5	LA-505-412	DN	1.44	mg/kg		1.01	0.101	0.101							
Nickel	7440-02-0	LA-505-412	DU	< 0.202	mg/kg		1.01	0.202	0.303							
Silver	7440-22-4	LA-505-412	DU	< 0.101	mg/kg		1.01	0.101	0.202							
Antimony	7440-36-0	LA-505-412	DU	< 0.303	mg/kg		1.01	0.303	1.51							
Barium	7440-39-3	LA-505-412	D	0.482	mg/kg		1.01	0.202	1.01							
Beryllium	7440-41-7	LA-505-412	DU	< 0.0504	mg/kg		1.01	0.0504	1.01							
Cadmium	7440-43-9	LA-505-412	DU	< 0.101	mg/kg		1.01	0.101	0.202							
Chromium	7440-47-3	LA-505-412	DU	< 0.504	mg/kg		1.01	0.504	3.53							
Cobalt	7440-48-4	LA-505-412	D	0.0666	mg/kg		1.01	0.0504	0.101							
Copper	7440-50-8	LA-505-412	CD	0.667	mg/kg		1.01	0.101	1.01							
Vanadium	7440-62-2	LA-505-412	D	0.393	mg/kg		1.01	0.202	2.52							
Zinc	7440-66-6	LA-505-412	CD	1.33	mg/kg		1.01	0.807	1.51							
Lead	7439-92-1	LA-505-412	D	0.141	mg/kg		1.01	0.101	0.252							
Mercury	7439-97-6	LA-505-412	DU	< 0.0504	mg/kg		1.01	0.0504	0.202							
Molybdenum	7439-98-7	LA-505-412	DU	< 0.0504	mg/kg		1.01	0.0504	0.504							
Thorium	7440-29-1	LA-505-412	D	0.335	mg/kg		1.01	0.101	0.252							
Uranium	7440-61-1	LA-505-412	DU	< 0.0504	mg/kg		1.01	0.0504	0.101							
Arsenic	7440-38-2	LA-505-412	DU	< 0.404	mg/kg		1.01	0.404	5.04							
Selenium	7782-49-2	LA-505-412	DU	< 0.303	mg/kg		1.01	0.303	2.02							

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(org)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000251  
 Client ID: B1ML89

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

KLAGES  
 WSCF

Matrix: SOIL

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Thallium	7440-28-0	LA-505-412	DU	< 0.101	mg/kg			1.01	0.101	0.151	03/06/07
Strontium	7440-24-6	LA-505-412	D	0.324	mg/kg			1.01	0.101	0.151	03/06/07
Tin	7440-31-5	LA-505-412	DU	< 0.0504	mg/kg			1.01	0.0504	0.252	03/06/07
<b>Total solids</b>											
Total solids	TS	LA-519-412		>99.5	Percent			1.00	0.0		03/07/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria(inorg)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

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**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000252  
 Client ID: B1ML90

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

KLAGES  
WSCF

Matrix: SOIL

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Hexavalent Chromium Prep</b>											03/14/07
<b>Hexavalent Chromium</b>											
Hexavalent Chromium	18540-29-9	LA-265-403	U	<0.10	mg/kg			1.00	0.10		03/15/07
ICP-200.8 MS All possible meta Prep											03/06/07
ICP-200.8 MS All possible meta											
Aluminum	7429-90-5	LA-505-412		44.5	mg/kg			0.99	4.96	49.6	03/06/07
Manganese	7439-96-5	LA-505-412	N	0.647	mg/kg			0.99	0.0992	0.0992	03/06/07
Nickel	7440-02-0	LA-505-412	U	< 0.198	mg/kg			0.99	0.198	0.297	03/06/07
Silver	7440-22-4	LA-505-412	U	< 0.0992	mg/kg			0.99	0.0992	0.198	03/06/07
Antimony	7440-36-0	LA-505-412	U	< 0.297	mg/kg			0.99	0.297	1.49	03/06/07
Barium	7440-39-3	LA-505-412		0.228	mg/kg			0.99	0.198	0.992	03/06/07
Beryllium	7440-41-7	LA-505-412	U	< 0.0496	mg/kg			0.99	0.0496	0.992	03/06/07
Cadmium	7440-43-9	LA-505-412	U	< 0.0992	mg/kg			0.99	0.0992	0.198	03/06/07
Chromium	7440-47-3	LA-505-412		1.32	mg/kg			0.99	0.496	3.47	03/06/07
Cobalt	7440-48-4	LA-505-412	U	< 0.0496	mg/kg			0.99	0.0496	0.0992	03/06/07
Copper	7440-50-8	LA-505-412	C	0.378	mg/kg			0.99	0.0992	0.992	03/06/07
Vanadium	7440-62-2	LA-505-412		0.429	mg/kg			0.99	0.198	2.48	03/06/07
Zinc	7440-66-6	LA-505-412	C	1.52	mg/kg			0.99	0.793	1.49	03/06/07
Lead	7439-92-1	LA-505-412		0.250	mg/kg			0.99	0.0992	0.248	03/06/07
Mercury	7439-97-6	LA-505-412	U	< 0.0496	mg/kg			0.99	0.0496	0.198	03/06/07
Molybdenum	7439-98-7	LA-505-412		0.0606	mg/kg			0.99	0.0496	0.496	03/06/07
Thorium	7440-29-1	LA-505-412		0.360	mg/kg			0.99	0.0992	0.248	03/06/07
Uranium	7440-61-1	LA-505-412		0.0497	mg/kg			0.99	0.0496	0.0992	03/06/07
Arsenic	7440-38-2	LA-505-412	U	< 0.397	mg/kg			0.99	0.397	4.96	03/06/07
Selenium	7782-49-2	LA-505-412	U	< 0.297	mg/kg			0.99	0.297	1.98	03/06/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(inorg)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

Report WGPP/ver. 5.2

PROJECT HANFORD MANAGEMENT COMPANY

# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000252  
 Client ID: B1ML90

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

KLAGES  
 WSCF

Matrix: SOIL

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Thallium	7440-28-0	LA-505-412	U	< 0.0992	mg/kg			0.99	0.0992	0.149	03/06/07
Strontium	7440-24-6	LA-505-412		0.182	mg/kg			0.99	0.0992	0.149	03/06/07
Tin	7440-31-5	LA-505-412	U	< 0.0496	mg/kg			0.99	0.0498	0.248	03/06/07
<b>Total solids</b>											
Total solids	TS	LA-519-412		>99.5	Percent			1.00	0.0		03/07/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria(inorg)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

**Report WGPP/ver. 5.2**

**PROJECT HANFORD MANAGEMENT COMPANY**

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** DL KLAGES  
**SAF Number:**R07-007  
**Sample #** W070000253  
**Client ID:** B1MLB0

KLAGES  
WSCF

**Group #:** WSCF20070354  
**Department:** Inorganic  
**Sampled:** 03/01/07  
**Received:** 03/02/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexavalent Chromium Prep											03/14/07
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	U	<0.10	mg/kg			1.00	0.10		03/15/07
ICP-200.8 MS All possible meta Prep											03/06/07
ICP-200.8 MS All possible meta											
Aluminum	7429-90-5	LA-505-412	D	6.67e+03	mg/kg			1.03	5.14	51.4	03/06/07
Manganese	7439-96-5	LA-505-412	DN	308	mg/kg			1.03	0.103	0.103	03/06/07
Nickel	7440-02-0	LA-505-412	D	8.40	mg/kg			1.03	0.206	0.309	03/06/07
Silver	7440-22-4	LA-505-412	DU	< 0.103	mg/kg			1.03	0.103	0.206	03/06/07
Antimony	7440-36-0	LA-505-412	D	1.13	mg/kg			1.03	0.309	1.54	03/06/07
Barium	7440-39-3	LA-505-412	D	64.0	mg/kg			1.03	0.206	1.03	03/06/07
Beryllium	7440-41-7	LA-505-412	D	0.286	mg/kg			1.03	0.0514	1.03	03/06/07
Cadmium	7440-43-9	LA-505-412	D	0.116	mg/kg			1.03	0.103	0.206	03/06/07
Chromium	7440-47-3	LA-505-412	D	8.06	mg/kg			1.03	0.514	3.60	03/06/07
Cobalt	7440-48-4	LA-505-412	D	7.03	mg/kg			1.03	0.0514	0.103	03/06/07
Copper	7440-50-8	LA-505-412	D	12.9	mg/kg			1.03	0.103	1.03	03/06/07
Vanadium	7440-62-2	LA-505-412	D	41.7	mg/kg			1.03	0.206	2.57	03/06/07
Zinc	7440-66-6	LA-505-412	D	42.7	mg/kg			1.03	0.823	1.54	03/06/07
Lead	7439-92-1	LA-505-412	D	6.16	mg/kg			1.03	0.103	0.257	03/06/07
Mercury	7439-97-6	LA-505-412	DU	< 0.0514	mg/kg			1.03	0.0514	0.206	03/06/07
Molybdenum	7439-98-7	LA-505-412	D	0.270	mg/kg			1.03	0.0514	0.514	03/06/07
Thorium	7440-29-1	LA-505-412	D	2.24	mg/kg			1.03	0.103	0.257	03/06/07
Uranium	7440-61-1	LA-505-412	D	0.316	mg/kg			1.03	0.0514	0.103	03/06/07
Arsenic	7440-38-2	LA-505-412	D	2.24	mg/kg			1.03	0.412	5.14	03/06/07
Selenium	7782-49-2	LA-505-412	DU	< 0.309	mg/kg			1.03	0.309	2.06	03/06/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(org)

**TP Err=Total Propagated Error**

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**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

U - Analyzed for but not detected above limiting criteria.(org)

**Report WGPP/ver. 5.2**

**PROJECT HANFORD MANAGEMENT COMPANY**

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000253  
 Client ID: B1MLB0

KLAGES  
 WSCF

Group #: WSCF20070354  
 Department: Inorganic  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		TP Err	Unit	DF	MDL	PQL	Analysis Date
				SOIL							
Thallium	7440-28-0	LA-505-412	DU	<	0.103	mg/kg		1.03	0.103	0.154	03/06/07
Strontium	7440-24-6	LA-505-412	D		19.3	mg/kg		1.03	0.103	0.154	03/06/07
Tin	7440-31-5	LA-505-412	D		0.420	mg/kg		1.03	0.0514	0.257	03/06/07
<b>Total solids</b>											
Total solids	TS	LA-519-412			90.8	Percent		1.00	0.0		03/07/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(org)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

*Report WGPP/ver. 5.2*

PROJECT HANFORD MANAGEMENT COMPANY

**WSCF**  
**ANALYTICAL COMMENT REPORT**

**Attention:** DL KLAGES

**Group #:** WSCF20070354  
**Department:** Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		Organics: All results are moisture corrected and reported on a dry weight basis. cgc
				W070000246-253/GEA batch duplicate is flagged for four nuclides being out of RPD range. Pb214, Bi214, and Ra226 are flagged for poor RPD because the sample is not homogeneous. Bi212 is flagged for poor RPD but the sample activity is low level so the RPD does not apply. lmh
				H-3 LCS recovery is low but only slightly out of range. Since all the other QC checks came out fine, this batch has been accepted. lmh
				W070000246/U235 duplicate is flagged for poor RPD but the sample activity is low level so the RPD doesn't apply. lmh
				Am241 duplicate is flagged for poor RPD however, the sample activity is low level. RPD does not apply to low level samples with high counting error. lmh

Lab Areas: VALGROUP - Group Validation  
LOGSAMP - Login for Sample

VALTEST - Test Validation  
LOGTEST - Login for Tests

TESTDATA - Test Data Entry

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# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070354

Matrix: SOLID

Test: Hexavalent chromium

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
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Lab ID: W070000251

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Hexavalent chromium	18540-29-9	<0.10		RPD			n/a	15.000	U	03/15/07
MS	Hexavalent chromium	18540-29-9	43.04	85.823	% Recov	75.000	125.000				03/15/07
MSD	Hexavalent chromium	18540-29-9	42.44	84.626	% Recov	75.000	125.000				03/15/07
SPK-POST	Hexavalent chromium	18540-29-9	0.0513	99.226	% Recov	75.000	125.000				03/15/07
SPK-RPD	Hexavalent chromium	18540-29-9	84.626		RPD			1.405	20.000		03/15/07

## BATCH QC

BLNK-PREP	Hexavalent chromium	18540-29-9	<0.10	n/a	ug/g	0.000	2.000			U	03/15/07
LCS	Hexavalent chromium	18540-29-9	139.0	81.002	% Recov	80.000	120.000				03/15/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070354

Matrix: SOLID

Test: ICP-200.8 MS All possible meta

Sample Date: 02/26/07

Receive Date: 02/26/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W070000217</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
MS	Silver	7440-22-4	202.8	101.400	% Recov	70.000	130.000				03/06/07
MS	Aluminum	7429-90-5	n/a	n/a	% Recov	70.000	130.000				03/06/07
MS	Arsenic	7440-38-2	147.68	73.840	% Recov	70.000	130.000				03/06/07
MS	Barium	7440-39-3	197.65	98.825	% Recov	70.000	130.000				03/06/07
MS	Beryllium	7440-41-7	206.059	103.029	% Recov	70.000	130.000				03/06/07
MS	Cadmium	7440-43-9	200.0791	100.040	% Recov	70.000	130.000				03/06/07
MS	Cobalt	7440-48-4	182.633	91.317	% Recov	70.000	130.000				03/06/07
MS	Chromium	7440-47-3	184.874	92.437	% Recov	70.000	130.000				03/06/07
MS	Copper	7440-50-8	192.43	96.215	% Recov	70.000	130.000				03/06/07
MS	Mercury	7439-97-6	2.233	111.650	% Recov	70.000	130.000				03/06/07
MS	Manganese	7439-96-5	185.3	92.650	% Recov	70.000	130.000				03/06/07
MS	Molybdenum	7439-98-7	160.1118	80.056	% Recov	70.000	130.000				03/06/07
MS	Nickel	7440-02-0	190.5	95.250	% Recov	70.000	130.000				03/06/07
MS	Lead	7439-92-1	222.404	111.202	% Recov	70.000	130.000				03/06/07
MS	Antimony	7440-36-0	218.1	109.050	% Recov	70.000	130.000				03/06/07
MS	Selenium	7782-49-2	147.4	73.700	% Recov	70.000	130.000				03/06/07
MS	Tin	7440-31-5	213.55	106.775	% Recov	70.000	130.000				03/06/07
MS	Strontium	7440-24-6	149.2	74.600	% Recov	70.000	130.000				03/06/07
MS	Thorium	7440-29-1	201.635	100.818	% Recov	70.000	130.000				03/06/07
MS	Thallium	7440-28-0	188.6848	94.342	% Recov	70.000	130.000				03/06/07
MS	Uranium	7440-61-1	203.5721	101.786	% Recov	70.000	130.000				03/06/07
MS	Vanadium	7440-62-2	178.56	89.280	% Recov	70.000	130.000				03/06/07
MS	Zinc	7440-66-6	189.17	94.585	% Recov	70.000	130.000				03/06/07
MSD	Silver	7440-22-4	196.3	98.150	% Recov	70.000	130.000				03/06/07
MSD	Aluminum	7429-90-5	2775	n/a	% Recov	70.000	130.000				03/06/07
MSD	Arsenic	7440-38-2	163.58	81.790	% Recov	70.000	130.000				03/06/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070354

Matrix: SOLID

Test: ICP-200.8 MS All possible meta

Sample Date: 02/26/07

Receive Date: 02/26/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Barium	7440-39-3	195.95	97.975	% Recov	70.000	130.000				03/06/07
MSD	Beryllium	7440-41-7	211.859	105.930	% Recov	70.000	130.000				03/06/07
MSD	Cadmium	7440-43-9	203.7791	101.890	% Recov	70.000	130.000				03/06/07
MSD	Cobalt	7440-48-4	188.733	94.367	% Recov	70.000	130.000				03/06/07
MSD	Chromium	7440-47-3	192.374	96.187	% Recov	70.000	130.000				03/06/07
MSD	Copper	7440-50-8	199.33	99.665	% Recov	70.000	130.000				03/06/07
MSD	Mercury	7439-97-6	2.299	114.950	% Recov	70.000	130.000				03/06/07
MSD	Manganese	7439-96-5	135.9	67.950	% Recov	70.000	130.000				03/06/07
MSD	Molybdenum	7439-98-7	175.7118	87.856	% Recov	70.000	130.000				03/06/07
MSD	Nickel	7440-02-0	196.1	98.050	% Recov	70.000	130.000				03/06/07
MSD	Lead	7439-92-1	228.704	114.352	% Recov	70.000	130.000				03/06/07
MSD	Antimony	7440-36-0	219.6	109.800	% Recov	70.000	130.000				03/06/07
MSD	Selenium	7782-49-2	162.6	81.300	% Recov	70.000	130.000				03/06/07
MSD	Tin	7440-31-5	216.65	108.325	% Recov	70.000	130.000				03/06/07
MSD	Strontium	7440-24-6	165.9	82.950	% Recov	70.000	130.000				03/06/07
MSD	Thorium	7440-29-1	207.535	103.767	% Recov	70.000	130.000				03/06/07
MSD	Thallium	7440-28-0	194.9848	97.492	% Recov	70.000	130.000				03/06/07
MSD	Uranium	7440-61-1	208.4721	104.236	% Recov	70.000	130.000				03/06/07
MSD	Vanadium	7440-62-2	177.26	88.630	% Recov	70.000	130.000				03/06/07
MSD	Zinc	7440-66-6	189.57	94.785	% Recov	70.000	130.000				03/06/07
SPK-RPD	Silver	7440-22-4	98.150		RPD			3.257	20.000		03/07/07
SPK-RPD	Aluminum	7429-90-5			RPD			n/a	20.000		03/07/07
SPK-RPD	Arsenic	7440-38-2	81.790		RPD			10.217	20.000		03/07/07
SPK-RPD	Barium	7440-39-3	97.975		RPD			0.864	20.000		03/07/07
SPK-RPD	Beryllium	7440-41-7	105.930		RPD			2.777	20.000		03/07/07
SPK-RPD	Cadmium	7440-43-9	101.890		RPD			1.832	20.000		03/07/07
SPK-RPD	Cobalt	7440-48-4	94.367		RPD			3.285	20.000		03/07/07
SPK-RPD	Chromium	7440-47-3	96.187		RPD			3.976	20.000		03/07/07
SPK-RPD	Copper	7440-50-8	99.665		RPD			3.523	20.000		03/07/07
SPK-RPD	Mercury	7439-97-6	114.950		RPD			2.913	20.000		03/07/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070354

Matrix: SOLID

Test: ICP-200.8 MS All possible meta

Sample Date: 02/26/07

Receive Date: 02/26/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD (%)	RPD Limit	RQ	Analysis Date
SPK-RPD	Manganese	7439-96-5	67.950		RPD			30.760	20.000	*	03/07/07
SPK-RPD	Molybdenum	7439-98-7	87.856		RPD			9.291	20.000		03/07/07
SPK-RPD	Nickel	7440-02-0	98.050		RPD			2.897	20.000		03/07/07
SPK-RPD	Lead	7439-92-1	114.352		RPD			2.793	20.000		03/07/07
SPK-RPD	Antimony	7440-36-0	109.800		RPD			0.685	20.000		03/07/07
SPK-RPD	Selenium	7782-49-2	81.300		RPD			9.806	20.000		03/07/07
SPK-RPD	Tin	7440-31-5	108.325		RPD			1.441	20.000		03/07/07
SPK-RPD	Strontium	7440-24-6	82.950		RPD			10.600	20.000		03/07/07
SPK-RPD	Thorium	7440-29-1	103.767		RPD			2.883	20.000		03/07/07
SPK-RPD	Thallium	7440-28-0	97.492		RPD			3.284	20.000		03/07/07
SPK-RPD	Uranium	7440-61-1	104.236		RPD			2.378	20.000		03/07/07
SPK-RPD	Vanadium	7440-62-2	88.630		RPD			0.731	20.000		03/07/07
SPK-RPD	Zinc	7440-66-6	94.785		RPD			0.211	20.000		03/07/07

## BATCH QC

BLANK	Silver	7440-22-4	<0.1	n/a	ug/L				U	03/06/07
BLANK	Aluminum	7429-90-5	<5	n/a	ug/L				U	03/06/07
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L				U	03/06/07
BLANK	Barium	7440-39-3	<0.2	n/a	ug/L				U	03/06/07
BLANK	Beryllium	7440-41-7	<5e-2	n/a	ug/L				U	03/06/07
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L				U	03/06/07
BLANK	Cobalt	7440-48-4	<5e-2	n/a	ug/L				U	03/06/07
BLANK	Chromium	7440-47-3	<0.5	n/a	ug/L				U	03/06/07
BLANK	Copper	7440-50-8	0.2079	0.208	ug/L					03/06/07
BLANK	Mercury	7439-97-6	<5e-2	n/a	ug/L				U	03/06/07
BLANK	Manganese	7439-96-5	<0.1	n/a	ug/L				U	03/06/07
BLANK	Molybdenum	7439-98-7	<5e-2	n/a	ug/L				U	03/06/07
BLANK	Nickel	7440-02-0	<0.2	n/a	ug/L				U	03/06/07
BLANK	Lead	7439-92-1	<0.1	n/a	ug/L				U	03/06/07
BLANK	Antimony	7440-36-0	<0.3	n/a	ug/L				U	03/06/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070354

Matrix: SOLID

Test: ICP-200.8 MS All possible meta

Sample Date:

Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Selenium	7782-49-2	<0.3	n/a	ug/L					U	03/06/07
BLANK	Tin	7440-31-5	<5e-2	n/a	ug/L					U	03/06/07
BLANK	Strontium	7440-24-6	<0.1	n/a	ug/L					U	03/06/07
BLANK	Thorium	7440-29-1	<0.1	n/a	ug/L					U	03/06/07
BLANK	Thallium	7440-28-0	<0.1	n/a	ug/L					U	03/06/07
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	03/06/07
BLANK	Vanadium	7440-62-2	<0.2	n/a	ug/L					U	03/06/07
BLANK	Zinc	7440-66-6	1.59	1.590	ug/L						03/06/07
LCS	Silver	7440-22-4	142.6	109.692	% Recov	98.000	134.000				03/06/07
LCS	Aluminum	7429-90-5	6280	99.367	% Recov	49.000	125.000				03/06/07
LCS	Arsenic	7440-38-2	162.5	100.932	% Recov	75.000	134.000				03/06/07
LCS	Barium	7440-39-3	249	98.810	% Recov	87.000	121.000				03/06/07
LCS	Beryllium	7440-41-7	96.45	102.172	% Recov	70.000	153.000				03/06/07
LCS	Cadmium	7440-43-9	130.9	102.266	% Recov	95.000	124.000				03/06/07
LCS	Cobalt	7440-48-4	35.04	99.545	% Recov	88.000	119.000				03/06/07
LCS	Chromium	7440-47-3	71.89	103.439	% Recov	77.000	125.000				03/06/07
LCS	Copper	7440-50-8	152	102.703	% Recov	84.000	122.000				03/06/07
LCS	Mercury	7439-97-6	15.83	93.669	% Recov	71.000	132.000				03/06/07
LCS	Manganese	7439-96-5	420.8	103.137	% Recov	83.000	118.000				03/06/07
LCS	Molybdenum	7439-98-7	84.76	100.785	% Recov	71.000	130.000				03/06/07
LCS	Nickel	7440-02-0	153.8	104.626	% Recov	90.000	121.000				03/06/07
LCS	Lead	7439-92-1	148.5	104.577	% Recov	92.000	123.000				03/06/07
LCS	Antimony	7440-36-0	112	183.908	% Recov	114.000	260.000				03/06/07
LCS	Selenium	7782-49-2	67.44	105.047	% Recov	52.000	157.000				03/06/07
LCS	Tin	7440-31-5	60.54	99.246	% Recov	86.000	123.000				03/06/07
LCS	Strontium	7440-24-6	79.8	95.000	% Recov	68.000	123.000				03/06/07
LCS	Thorium	7440-29-1	386.8	96.700	% Recov	77.000	121.000				03/06/07
LCS	Thallium	7440-28-0	78.72	93.714	% Recov	92.000	123.000				03/06/07
LCS	Uranium	7440-61-1	395	98.750	% Recov	81.000	125.000				03/06/07
LCS	Vanadium	7440-62-2	98.59	101.326	% Recov	81.000	122.000				03/06/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070354

Matrix: SOLID

Test: ICP-200.8 MS All possible meta

Sample Date:

Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
LCS	Zinc	7440-66-6	182.7	110.727	% Recov	85.000	130.000				03/06/07

# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000246  
 Client ID: B1ML84

KLAGES  
 WSCF

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		SOIL		DF	MDL	PQL	Analysis Date
				Result	Unit	TP Err	Unit				
<b>Americium by AEA</b>											
Americium-241	14596-10-2	LA-508-471		0.0310	pCi/g	+0.0164	pCi/g	1.00	0.014		03/15/07
Am-243 tracer by AEA	AM243	LA-508-471		3.90	pCi/g			1.00	0.020		03/15/07
<b>Gamma Energy Analysis-grd H2O</b>											
Americium-241	14596-10-2	LA-508-481	U	0.0147	pCi/g	+0.0505	pCi/g	1.00	0.077		03/07/07
Antimony-125	14234-35-6	LA-508-481	U	-7.07e-03	pCi/g	+0.0183	pCi/g	1.00	0.030		03/07/07
Ba-133 by GEA	13981-41-4	LA-508-481	U	2.85e-03	pCi/g	+9.33e-03	pCi/g	1.00	0.014		03/07/07
Cerium-144	14762-78-8	LA-508-481	U	-2.57e-03	pCi/g	+0.0257	pCi/g	1.00	0.092		03/07/07
Cerium/Praseodymium-144	CE/PR-144	LA-508-481	U	-5.14e-03	pCi/g	+0.0514	pCi/g	1.00	0.18		03/07/07
Cobalt-60	10198-40-0	LA-508-481	U	-2.64e-03	pCi/g	+6.37e-03	pCi/g	1.00	0.011		03/07/07
Cesium-134	13967-70-9	LA-508-481	U	0.0428	pCi/g	+0.0154	pCi/g	1.00	0.043		03/07/07
Cesium-137	10045-97-3	LA-508-481		0.172	pCi/g	+0.0299	pCi/g	1.00	0.012		03/07/07
Europium-152	14683-23-9	LA-508-481	U	9.67e-03	pCi/g	+0.0232	pCi/g	1.00	0.035		03/07/07
Europium-154	15585-10-1	LA-508-481	U	4.54e-03	pCi/g	+0.0228	pCi/g	1.00	0.034		03/07/07
Europium-155	14391-16-3	LA-508-481	U	0.0594	pCi/g	+0.0433	pCi/g	1.00	0.047		03/07/07
Potassium-40	13966-00-2	LA-508-481		12.9	pCi/g	+1.75	pCi/g	1.00	0.083		03/07/07
Niobium-94	14681-63-1	LA-508-481	U	4.42e-03	pCi/g	+5.75e-03	pCi/g	1.00	0.010		03/07/07
Radium-226	13982-63-3	LA-508-481		0.775	pCi/g	+0.123	pCi/g	1.00	0.021		03/07/07
Radium-228	15262-20-1	LA-508-481		0.687	pCi/g	+0.118	pCi/g	1.00	0.035		03/07/07
Ruthenium-106	13967-48-1	LA-508-481	U	-0.0405	pCi/g	+0.0532	pCi/g	1.00	0.089		03/07/07
Tin-126	15832-50-5	LA-508-481	U	0.158	pCi/g	+0.0373	pCi/g	1.00	0.16		03/07/07
Thorium-234	15065-10-8	LA-508-481	U	0.354	pCi/g	+0.423	pCi/g	1.00	0.64		03/07/07
Uranium-235	15117-96-1	LA-508-481	U	0.0606	pCi/g	+0.0201	pCi/g	1.00	0.096		03/07/07
Zinc-65	13982-39-3	LA-508-481	U	-6.44e-03	pCi/g	+0.0166	pCi/g	1.00	0.023		03/07/07
Actinium-228	14331-83-0	LA-508-481		0.687	pCi/g	+0.118	pCi/g	1.00	0.035		03/07/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(org)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated;

+ - Indicates more than six qualifier symbols

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# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** DL KLAGES  
**SAF Number:** R07-007  
**Sample #** W070000246  
**Client ID:** B1ML84

**KLAGES**  
**WSCF**

**Group #:** WSCF20070354  
**Department:** Radiochemistry  
**Sampled:** 03/01/07  
**Received:** 03/02/07

<b>Test Performed</b>	<b>CAS #</b>	<b>Method</b>	<b>RQ</b>	<b>Matrix:</b>		<b>SOIL</b>		<b>DF</b>	<b>MDL</b>	<b>PQL</b>	<b>Analysis Date</b>
				<b>Result</b>	<b>Unit</b>	<b>TP Err</b>	<b>Unit</b>				
Bismuth-212	14913-49-6	LA-508-481		0.334	pCi/g	+ -0.0949	pCi/g	1.00	0.083		03/07/07
Bismuth-214	14733-03-0	LA-508-481		0.775	pCi/g	+ -0.123	pCi/g	1.00	0.021		03/07/07
Lead-212	15092-94-1	LA-508-481		0.690	pCi/g	+ -0.0930	pCi/g	1.00	0.023		03/07/07
Lead-214	15067-28-4	LA-508-481		0.802	pCi/g	+ -0.110	pCi/g	1.00	0.024		03/07/07
Ruthenium-103	13968-53-1	LA-508-481	U	-7.80e-04	pCi/g	+ -6.46e-03	pCi/g	1.00	0.011		03/07/07
Tin-113	13966-06-8	LA-508-481	U	1.65e-03	pCi/g	+ -8.73e-03	pCi/g	1.00	0.015		03/07/07
Thallium-208	14913-50-9	LA-508-481		0.226	pCi/g	+ -0.0375	pCi/g	1.00	0.010		03/07/07
<b>Plutonium Isotopes by AEA</b>											
Plutonium-238	13981-16-3	LA-508-471	U	7.50e-03	pCi/g	+ -8.10e-03	pCi/g	1.00	0.011		03/15/07
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.0480	pCi/g	+ -0.0202	pCi/g	1.00	0.011		03/15/07
Pu-242 tracer by AEA	PU242	LA-508-471		6.00	pCi/g			1.00	4.0e-03		03/15/07
<b>Strontium 89/90</b>											
Strontium-89/90	SR-RAD	LA-508-415	U	-0.110	pCi/g	+ -0.539	pCi/g	1.00	0.30		03/08/07
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		101	Percent			1.00	0.0		03/08/07
<b>TC99 by Liquid Scin.</b>											
Technetium-99	14133-76-7	LA-508-421	U	-0.00	pCi/g	+ --0.00	pCi/g	1.00	0.20		03/08/07
<b>Tritium by Liq Sct column prep</b>											
Tritium	10028-17-8	LA-508-421	U	0.440	pCi/g	+ -3.75	pCi/g	1.00	0.90		03/07/07
<b>Uranium Isotopes by AEA</b>											
Uranium-233/234	U-233/234	LA-508-471		0.150	pCi/g	+ -0.0525	pCi/g	1.00	0.019		03/15/07
Uranium-235	15117-96-1	LA-508-471		0.0240	pCi/g	+ -0.0158	pCi/g	1.00	5.9e-03		03/15/07
Uranium-238	U-238	LA-508-471		0.130	pCi/g	+ -0.0468	pCi/g	1.00	5.4e-03		03/15/07
U-232 tracer by AEA	U232	LA-508-471		4.30	pCi/g			1.00	0.042		03/15/07

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000247  
 Client ID: B1ML85

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix: SOIL		DF	MDL	PQL	Analysis Date
				KLAGES	WSRF				
<b>Americium by AEA</b>									
Americium-241	14596-10-2	LA-508-471		0.0370	pCi/g	+ -0.0174	pCi/g	1.00	0.011
Am-243 tracer by AEA	AM243	LA-508-471		3.90	pCi/g			1.00	0.011
<b>Gamma Energy Analysis-grd H2O</b>									
Americium-241	14596-10-2	LA-508-481	U	-0.116	pCi/g	+ -0.0606	pCi/g	1.00	0.096
Antimony-125	14234-35-6	LA-508-481	U	0.0165	pCi/g	+ -0.0209	pCi/g	1.00	0.036
Ba-133 by GEA	13981-41-4	LA-508-481	U	6.63e-04	pCi/g	+ -6.63e-03	pCi/g	1.00	0.016
Cerium-144	14762-78-8	LA-508-481	U	-0.0497	pCi/g	+ -0.0758	pCi/g	1.00	0.11
Cerium/Praseodymium-144	CE/PR-144	LA-508-481	U	-0.0995	pCi/g	+ -0.152	pCi/g	1.00	0.22
Cobalt-60	10198-40-0	LA-508-481	U	7.49e-04	pCi/g	+ -7.49e-03	pCi/g	1.00	0.013
Cesium-134	13967-70-9	LA-508-481	U	0.0305	pCi/g	+ -0.0103	pCi/g	1.00	0.040
Cesium-137	10045-97-3	LA-508-481		0.126	pCi/g	+ -0.0260	pCi/g	1.00	0.013
Europium-152	14683-23-9	LA-508-481	U	-0.0158	pCi/g	+ -0.0305	pCi/g	1.00	0.039
Europium-154	15585-10-1	LA-508-481	U	-6.58e-03	pCi/g	+ -0.0262	pCi/g	1.00	0.037
Europium-155	14391-16-3	LA-508-481	U	0.0753	pCi/g	+ -0.0475	pCi/g	1.00	0.057
Potassium-40	13966-00-2	LA-508-481		14.6	pCi/g	+ -1.93	pCi/g	1.00	0.11
Niobium-94	14681-63-1	LA-508-481	U	2.01e-03	pCi/g	+ -7.11e-03	pCi/g	1.00	0.012
Radium-226	13982-63-3	LA-508-481		0.566	pCi/g	+ -0.102	pCi/g	1.00	0.025
Radium-228	15262-20-1	LA-508-481		0.720	pCi/g	+ -0.126	pCi/g	1.00	0.041
Ruthenium-106	13967-48-1	LA-508-481	U	0.0378	pCi/g	+ -0.0669	pCi/g	1.00	0.11
Tin-126	15832-50-5	LA-508-481	U	0.137	pCi/g	+ -0.0390	pCi/g	1.00	0.14
Thorium-234	15065-10-8	LA-508-481	U	0.712	pCi/g	+ -0.268	pCi/g	1.00	0.81
Uranium-235	15117-96-1	LA-508-481	U	0.0804	pCi/g	+ -0.0252	pCi/g	1.00	0.11
Zinc-65	13982-39-3	LA-508-481	U	6.83e-03	pCi/g	+ -0.0206	pCi/g	1.00	0.030
Actinium-228	14331-83-0	LA-508-481		0.720	pCi/g	+ -0.126	pCi/g	1.00	0.041

**MDL=Minimum Detection Limit**

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000247  
 Client ID: B1ML85

KLAGES  
 WSCF

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		SOIL		DF	MDL	PQL	Analysis Date
				Result	Unit	TP Err	Unit				
Bismuth-212	14913-49-6	LA-508-481		0.459	pCi/g	+ -0.128	pCi/g	1.00	0.093		03/05/07
Bismuth-214	14733-03-0	LA-508-481		0.566	pCi/g	+ -0.102	pCi/g	1.00	0.025		03/05/07
Lead-212	15092-94-1	LA-508-481		0.726	pCi/g	+ -0.0996	pCi/g	1.00	0.026		03/05/07
Lead-214	15067-28-4	LA-508-481		0.584	pCi/g	+ -0.0855	pCi/g	1.00	0.028		03/05/07
Ruthenium-103	13968-53-1	LA-508-481	U	5.77e-04	pCi/g	+ -5.77e-03	pCi/g	1.00	0.012		03/05/07
Tin-113	13966-06-8	LA-508-481	U	-3.67e-03	pCi/g	+ -9.54e-03	pCi/g	1.00	0.016		03/05/07
Thallium-208	14913-50-9	LA-508-481		0.220	pCi/g	+ -0.0395	pCi/g	1.00	0.012		03/05/07
<b>Plutonium Isotopics by AEA</b>											
Plutonium-238	13981-16-3	LA-508-471	U	3.00e-03	pCi/g	+ -7.38e-03	pCi/g	1.00	0.014		03/15/07
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.0430	pCi/g	+ -0.0185	pCi/g	1.00	4.0e-03		03/15/07
Pu-242 tracer by AEA	PU242	LA-508-471		6.10	pCi/g			1.00	4.0e-03		03/15/07
<b>Strontium 89/90</b>											
Strontium-89/90	SR-RAD	LA-508-415		0.980	pCi/g	+ -0.588	pCi/g	1.00	0.32		03/08/07
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		95.2	Percent			1.00	0.0		03/08/07
<b>TC99 by Liquid Scin.</b>											
Technetium-99	14133-76-7	LA-508-421	U	-0.00	pCi/g	+ --0.00	pCi/g	1.00	0.20		03/08/07
<b>Tritium by Liq Sct column prep</b>											
Tritium	10028-17-8	LA-508-421	U	0.350	pCi/g	+ -0.332	pCi/g	1.00	0.90		03/07/07
<b>Uranium Isotopics by AEA</b>											
Uranium-233/234	U-233/234	LA-508-471		0.110	pCi/g	+ -0.0396	pCi/g	1.00	0.014		03/15/07
Uranium-235	15117-96-1	LA-508-471	U	0.0140	pCi/g	+ -0.0125	pCi/g	1.00	0.015		03/15/07
Uranium-238	U-238	LA-508-471		0.0960	pCi/g	+ -0.0365	pCi/g	1.00	5.0e-03		03/15/07
U-232 tracer by AEA	U232	LA-508-471		4.40	pCi/g			1.00	0.050		03/15/07

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000248  
 Client ID: B1ML86

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix: SOIL		DF	MDL	PQL	Analysis Date
				Unit	TP Err				
<b>Americium by AEA</b>									
Americium-241	14596-10-2	LA-508-471		0.0240	pCi/g	+ -0.0139	pCi/g	1.00	0.013
Am-243 tracer by AEA	AM243	LA-508-471		3.80	pCi/g			1.00	0.013
<b>Gamma Energy Analysis-grd H2O</b>									
Americium-241	14596-10-2	LA-508-481	U	0.0192	pCi/g	+ -0.0450	pCi/g	1.00	0.069
Antimony-125	14234-35-6	LA-508-481	U	2.82e-03	pCi/g	+ -0.0163	pCi/g	1.00	0.027
Ba-133 by GEA	13981-41-4	LA-508-481	U	8.54e-04	pCi/g	+ -8.36e-03	pCi/g	1.00	0.012
Cerium-144	14762-78-8	LA-508-481	U	-0.0167	pCi/g	+ -0.0578	pCi/g	1.00	0.083
Cerium/Praseodymium-144	CE/PR-144	LA-508-481	U	-0.0334	pCi/g	+ -0.116	pCi/g	1.00	0.17
Cobalt-60	10198-40-0	LA-508-481	U	5.46e-03	pCi/g	+ -5.60e-03	pCi/g	1.00	0.010
Cesium-134	13967-70-9	LA-508-481	U	0.0251	pCi/g	+ -8.53e-03	pCi/g	1.00	0.030
Cesium-137	10045-97-3	LA-508-481		0.0130	pCi/g	+ -7.27e-03	pCi/g	1.00	0.010
Europium-152	14683-23-9	LA-508-481	U	5.99e-03	pCi/g	+ -0.0194	pCi/g	1.00	0.030
Europium-154	15585-10-1	LA-508-481	U	0.0121	pCi/g	+ -0.0202	pCi/g	1.00	0.031
Europium-155	14391-16-3	LA-508-481	U	0.0570	pCi/g	+ -0.0359	pCi/g	1.00	0.043
Potassium-40	13966-00-2	LA-508-481		12.3	pCi/g	+ -1.66	pCi/g	1.00	0.065
Niobium-94	14681-63-1	LA-508-481	U	4.61e-03	pCi/g	+ -5.41e-03	pCi/g	1.00	9.5e-03
Radium-226	13982-63-3	LA-508-481		0.463	pCi/g	+ -0.0766	pCi/g	1.00	0.019
Radium-228	15262-20-1	LA-508-481		0.583	pCi/g	+ -0.101	pCi/g	1.00	0.031
Ruthenium-106	13967-48-1	LA-508-481	U	-3.71e-03	pCi/g	+ -0.0371	pCi/g	1.00	0.085
Tin-126	15832-50-5	LA-508-481	U	0.176	pCi/g	+ -0.0388	pCi/g	1.00	0.20
Thorium-234	15065-10-8	LA-508-481	U	0.336	pCi/g	+ -0.413	pCi/g	1.00	0.55
Uranium-235	15117-96-1	LA-508-481	U	0.0542	pCi/g	+ -0.0609	pCi/g	1.00	0.087
Zinc-65	13982-39-3	LA-508-481	U	1.67e-04	pCi/g	+ -1.67e-03	pCi/g	1.00	0.023
Actinium-228	14331-83-0	LA-508-481		0.583	pCi/g	+ -0.101	pCi/g	1.00	0.031

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# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** DL KLAGES  
**SAF Number:**R07-007  
**Sample #** W070000248  
**Client ID:** B1ML86

KLAGES  
WSCF

**Group #:** WSCF20070354  
**Department:** Radiochemistry  
**Sampled:** 03/01/07  
**Received:** 03/02/07

Test Performed	CAS #	Method	RQ	Matrix: SOIL		DF	MDL	PQL	Analysis Date	
				Result	Unit					
Bismuth-212	14913-49-6	LA-508-481		0.411	pCi/g	+ -0.0983	pCi/g	1.00	0.074	03/06/07
Bismuth-214	14733-03-0	LA-508-481		0.463	pCi/g	+ -0.0766	pCi/g	1.00	0.019	03/06/07
Lead-212	15092-94-1	LA-508-481		0.636	pCi/g	+ -0.0857	pCi/g	1.00	0.020	03/06/07
Lead-214	15067-28-4	LA-508-481		0.488	pCi/g	+ -0.0699	pCi/g	1.00	0.021	03/06/07
Ruthenium-103	13968-63-1	LA-508-481	U	2.11e-03	pCi/g	+ -5.72e-03	pCi/g	1.00	9.6e-03	03/06/07
Tin-113	13966-06-8	LA-508-481	U	-6.13e-03	pCi/g	+ -7.28e-03	pCi/g	1.00	0.012	03/06/07
Thallium-208	14913-50-9	LA-508-481		0.184	pCi/g	+ -0.0301	pCi/g	1.00	9.5e-03	03/06/07
<b>Plutonium Isotopes by AEA</b>										
Plutonium-238	13981-16-3	LA-508-471	U	1.50e-03	pCi/g	+ -3.02e-03	pCi/g	1.00	4.1e-03	03/15/07
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.0140	pCi/g	+ -9.80e-03	pCi/g	1.00	4.1e-03	03/15/07
Pu-242 tracer by AEA	PU242	LA-508-471		6.00	pCi/g			1.00	4.1e-03	03/15/07
<b>Strontium 89/90</b>										
Strontium-89/90	SR-RAD	LA-508-415		0.360	pCi/g	+ -0.504	pCi/g	1.00	0.31	03/08/07
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		97.1	Percent			1.00	0.0	03/08/07
<b>TC99 by Liquid Scin.</b>										
Technetium-99	14133-76-7	LA-508-421	U	0.100	pCi/g	+ -0.130	pCi/g	1.00	0.20	03/08/07
<b>Tritium by Liq Sct column prep</b>										
Tritium	10028-17-8	LA-508-421	U	-0.0330	pCi/g	+ -0.150	pCi/g	1.00	0.90	03/07/07
<b>Uranium Isotopes by AEA</b>										
Uranium-233/234	U-233/234	LA-508-471		0.0720	pCi/g	+ -0.0302	pCi/g	1.00	0.016	03/15/07
Uranium-235	15117-96-1	LA-508-471		9.60e-03	pCi/g	+ -8.93e-03	pCi/g	1.00	5.2e-03	03/15/07
Uranium-238	U-238	LA-508-471		0.100	pCi/g	+ -0.0370	pCi/g	1.00	4.7e-03	03/15/07
U-232 tracer by AEA	U232	LA-508-471		4.30	pCi/g			1.00	0.039	03/15/07

**MDL=Minimum Detection Limit**

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D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(org)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

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*Report WGPP/ver. 5.2*

PROJECT HANFORD MANAGEMENT COMPANY

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**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000249  
 Client ID: B1ML87

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix: SOIL		DF	MDL	PQL	Analysis Date
				Unit	TP Err				
<b>Americium by AEA</b>									
Americium-241	14596-10-2	LA-508-471		0.0240	pCi/g	+0.0137	pCi/g	1.00	0.011
Am-243 tracer by AEA	AM243	LA-508-471		3.90	pCi/g			1.00	0.011
<b>Gamma Energy Analysis-grd H2O</b>									
Americium-241	14596-10-2	LA-508-481	U	-0.0202	pCi/g	+0.0797	pCi/g	1.00	0.12
Antimony-125	14234-35-6	LA-508-481	U	9.48e-03	pCi/g	+0.0214	pCi/g	1.00	0.037
Ba-133 by GEA	13981-41-4	LA-508-481	U	2.69e-03	pCi/g	+0.0119	pCi/g	1.00	0.017
Cerium-144	14762-78-8	LA-508-481	U	-9.57e-03	pCi/g	+0.0712	pCi/g	1.00	0.10
Cerium/Praseodymium-144	CE/PR-144	LA-508-481	U	-0.0191	pCi/g	+0.142	pCi/g	1.00	0.20
Cobalt-60	10198-40-0	LA-508-481	U	3.95e-03	pCi/g	+7.80e-03	pCi/g	1.00	0.014
Cesium-134	13967-70-9	LA-508-481	U	0.0352	pCi/g	+0.0135	pCi/g	1.00	0.017
Cesium-137	10045-97-3	LA-508-481		0.0836	pCi/g	+0.0187	pCi/g	1.00	0.015
Europium-152	14683-23-9	LA-508-481	U	1.20e-03	pCi/g	+0.0120	pCi/g	1.00	0.039
Europium-154	15585-10-1	LA-508-481	U	-0.0215	pCi/g	+0.0266	pCi/g	1.00	0.043
Europium-155	14391-16-3	LA-508-481	U	0.0451	pCi/g	+0.0422	pCi/g	1.00	0.055
Potassium-40	13966-00-2	LA-508-481		14.4	pCi/g	+1.89	pCi/g	1.00	0.11
Niobium-94	14681-63-1	LA-508-481	U	-5.86e-03	pCi/g	+7.46e-03	pCi/g	1.00	0.012
Radium-226	13982-63-3	LA-508-481		0.544	pCi/g	+0.0930	pCi/g	1.00	0.026
Radium-228	15262-20-1	LA-508-481		0.769	pCi/g	+0.131	pCi/g	1.00	0.044
Ruthenium-106	13967-48-1	LA-508-481	U	-5.60e-04	pCi/g	+5.60e-03	pCi/g	1.00	0.12
Tin-126	15832-50-5	LA-508-481	U	0.194	pCi/g	+0.0485	pCi/g	1.00	0.040
Thorium-234	15065-10-8	LA-508-481		0.994	pCi/g	+0.309	pCi/g	1.00	0.96
Uranium-235	15117-96-1	LA-508-481	U	0.0628	pCi/g	+0.0234	pCi/g	1.00	0.11
Zinc-65	13982-39-3	LA-508-481	U	0.0208	pCi/g	+0.0225	pCi/g	1.00	0.034
Actinium-228	14331-83-0	LA-508-481		0.769	pCi/g	+0.131	pCi/g	1.00	0.044

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

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PROJECT HANFORD MANAGEMENT COMPANY

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000249  
 Client ID: B1ML87

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix: SOIL		DF	MDL	PQL	Analysis Date	
				Result	Unit					
Bismuth-212	14913-49-6	LA-508-481		0.495	pCi/g	+0.127	pCi/g	1.00	0.10	03/06/07
Bismuth-214	14733-03-0	LA-508-481		0.544	pCi/g	+0.0930	pCi/g	1.00	0.026	03/06/07
Lead-212	15092-94-1	LA-508-481		0.749	pCi/g	+0.105	pCi/g	1.00	0.027	03/06/07
Lead-214	15067-28-4	LA-508-481		0.593	pCi/g	+0.0879	pCi/g	1.00	0.029	03/06/07
Ruthenium-103	13968-53-1	LA-508-481	U	-4.90e-03	pCi/g	+7.65e-03	pCi/g	1.00	0.013	03/06/07
Tin-113	13966-06-8	LA-508-481	U	8.32e-03	pCi/g	+9.98e-03	pCi/g	1.00	0.017	03/06/07
Thallium-208	14913-50-9	LA-508-481		0.227	pCi/g	+0.0393	pCi/g	1.00	0.013	03/06/07
<b>Plutonium Isotopes by AEA</b>										
Plutonium-238	13981-16-3	LA-508-471	U	1.70e-03	pCi/g	+1.70e-03	pCi/g	1.00	4.7e-03	03/15/07
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.0140	pCi/g	+0.0104	pCi/g	1.00	4.7e-03	03/15/07
Pu-242 tracer by AEA	PU242	LA-508-471		6.10	pCi/g			1.00	0.013	03/15/07
<b>Strontium 89/90</b>										
Strontium-89/90	SR-RAD	LA-508-415		0.460	pCi/g	+0.524	pCi/g	1.00	0.33	03/08/07
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		93.3	Percent			1.00	0.0	03/08/07
<b>TC99 by Liquid Scin.</b>										
Technetium-99	14133-76-7	LA-508-421	U	0.100	pCi/g	+0.0930	pCi/g	1.00	0.20	03/08/07
<b>Tritium by Liq Sct column prep</b>										
Tritium	10028-17-8	LA-508-421	U	0.0880	pCi/g	+0.167	pCi/g	1.00	0.90	03/07/07
<b>Uranium Isotopes by AEA</b>										
Uranium-233/234	U-233/234	LA-508-471		0.120	pCi/g	+0.0444	pCi/g	1.00	5.4e-03	03/15/07
Uranium-235	15117-96-1	LA-508-471		0.0170	pCi/g	+0.0141	pCi/g	1.00	0.016	03/15/07
Uranium-238	U-238	LA-508-471		0.140	pCi/g	+0.0490	pCi/g	1.00	0.018	03/15/07
U-232 tracer by AEA	U232	LA-508-471		4.40	pCi/g			1.00	0.037	03/15/07

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Report WGPP/ver. 5.2

PROJECT HANFORD MANAGEMENT COMPANY

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000250  
 Client ID: B1ML88

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix: SOIL		DF	MDL	PQL	Analysis Date
				Result	Unit				
<b>Americium by AEA</b>									
Americium-241	14596-10-2	LA-508-471		0.0210	pCi/g	+ -0.0118	pCi/g	1.00	3.9e-03
Am-243 tracer by AEA	AM243	LA-508-471		3.90	pCi/g			1.00	0.013
<b>Gamma Energy Analysis-grd H<sub>2</sub>O</b>									
Americium-241	14596-10-2	LA-508-481	U	0.0624	pCi/g	+ -0.0636	pCi/g	1.00	0.096
Antimony-125	14234-35-6	LA-508-481	U	3.72e-03	pCi/g	+ -0.0204	pCi/g	1.00	0.034
Ba-133 by GEA	13981-41-4	LA-508-481	U	1.18e-03	pCi/g	+ -0.0103	pCi/g	1.00	0.015
Cerium-144	14762-78-8	LA-508-481	U	-0.0256	pCi/g	+ -0.0590	pCi/g	1.00	0.094
Cerium/Praseodymium-144	CE/PR-144	LA-508-481	U	-0.0513	pCi/g	+ -0.118	pCi/g	1.00	0.19
Cobalt-60	10198-40-0	LA-508-481	U	3.91e-03	pCi/g	+ -7.77e-03	pCi/g	1.00	0.013
Cesium-134	13967-70-9	LA-508-481	U	0.0510	pCi/g	+ -0.0158	pCi/g	1.00	0.060
Cesium-137	10045-97-3	LA-508-481		0.188	pCi/g	+ -0.0348	pCi/g	1.00	0.013
Europium-152	14683-23-9	LA-508-481	U	-0.0179	pCi/g	+ -0.0246	pCi/g	1.00	0.035
Europium-154	15585-10-1	LA-508-481	U	-9.18e-03	pCi/g	+ -0.0257	pCi/g	1.00	0.042
Europium-155	14391-16-3	LA-508-481	U	0.0514	pCi/g	+ -0.0365	pCi/g	1.00	0.051
Potassium-40	13966-00-2	LA-508-481		15.2	pCi/g	+ -1.98	pCi/g	1.00	0.10
Niobium-94	14681-63-1	LA-508-481	U	8.53e-03	pCi/g	+ -7.19e-03	pCi/g	1.00	0.012
Radium-226	13982-63-3	LA-508-481		0.541	pCi/g	+ -0.0912	pCi/g	1.00	0.024
Radium-228	15262-20-1	LA-508-481		0.801	pCi/g	+ -0.130	pCi/g	1.00	0.042
Ruthenium-106	13967-48-1	LA-508-481	U	-0.0217	pCi/g	+ -0.0629	pCi/g	1.00	0.11
Tin-126	15832-50-5	LA-508-481	U	0.184	pCi/g	+ -0.0469	pCi/g	1.00	0.19
Thorium-234	15065-10-8	LA-508-481	U	0.659	pCi/g	+ -0.722	pCi/g	1.00	0.80
Uranium-235	15117-96-1	LA-508-481	U	0.0717	pCi/g	+ -0.0227	pCi/g	1.00	0.10
Zinc-65	13982-39-3	LA-508-481	U	0.0191	pCi/g	+ -0.0312	pCi/g	1.00	0.030
Actinium-228	14331-83-0	LA-508-481		0.801	pCi/g	+ -0.130	pCi/g	1.00	0.042

**MDL=Minimum Detection Limit**

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**Report WGPP/ver. 5.2**

**PROJECT HANFORD MANAGEMENT COMPANY**

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**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000250  
 Client ID: B1ML88

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		SOIL		DF	MDL	PQL	Analysis Date
				Unit	TP Err	Unit					
Bismuth-212	14913-49-6	LA-508-481		0.492	pCi/g	+ -0.137	pCi/g	1.00	0.095		03/06/07
Bismuth-214	14733-03-0	LA-508-481		0.541	pCi/g	+ -0.0912	pCi/g	1.00	0.024		03/06/07
Lead-212	15092-94-1	LA-508-481		0.759	pCi/g	+ -0.103	pCi/g	1.00	0.024		03/06/07
Lead-214	15067-28-4	LA-508-481		0.652	pCi/g	+ -0.0933	pCi/g	1.00	0.026		03/06/07
Ruthenium-103	13968-53-1	LA-508-481	U	-4.71e-03	pCi/g	+ -7.26e-03	pCi/g	1.00	0.012		03/06/07
Tin-113	13966-06-8	LA-508-481	U	-0.0104	pCi/g	+ -0.0104	pCi/g	1.00	0.015		03/06/07
Thallium-208	14913-50-9	LA-508-481		0.234	pCi/g	+ -0.0392	pCi/g	1.00	0.012		03/06/07
<b>Plutonium Isotopes by AEA</b>											
Plutonium-238	13981-16-3	LA-508-471	U	-5.40e-03	pCi/g	+ -0.0340	pCi/g	1.00	0.062		03/16/07
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.0500	pCi/g	+ -0.0235	pCi/g	1.00	0.013		03/16/07
Pu-242 tracer by AEA	PU242	LA-508-471		6.00	pCi/g			1.00	0.013		03/16/07
<b>Strontium 89/90</b>											
Strontium-89/90	SR-RAD	LA-508-415	U	0.230	pCi/g	+ -0.488	pCi/g	1.00	0.32		03/08/07
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		96.7	Percent			1.00	0.0		03/08/07
<b>TC99 by Liquid Scin.</b>											
Technetium-99	14133-76-7	LA-508-421	U	0.00	pCi/g	+ -0.00	pCi/g	1.00	0.20		03/08/07
<b>Tritium by Liq Sct column prep</b>											
Tritium	10028-17-8	LA-508-421	U	0.320	pCi/g	+ -3.16	pCi/g	1.00	0.90		03/07/07
<b>Uranium Isotopes by AEA</b>											
Uranium-233/234	U-233/234	LA-508-471		0.110	pCi/g	+ -0.0407	pCi/g	1.00	0.018		03/15/07
Uranium-235	15117-96-1	LA-508-471	U	8.50e-03	pCi/g	+ -0.0122	pCi/g	1.00	0.020		03/15/07
Uranium-238	U-238	LA-508-471		0.110	pCi/g	+ -0.0396	pCi/g	1.00	5.3e-03		03/15/07
U-232 tracer by AEA	U232	LA-508-471		4.30	pCi/g			1.00	0.048		03/15/07

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PROJECT HANFORD MANAGEMENT COMPANY

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000251  
 Client ID: B1ML89

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

KLAGES  
WSCF

Matrix: SOIL

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Americium by AEA</b>											
Americium-241	14596-10-2	LA-508-471		0.0450	pCi/g	+0.0212	pCi/g	1.00	0.016		03/26/07
Am-243 tracer by AEA	AM243	LA-508-471		3.90	pCi/g			1.00	0.026		03/26/07
<b>Gamma Energy Analysis-grd H<sub>2</sub>O</b>											
Americium-241	14596-10-2	LA-508-481	U	-0.0636	pCi/g	+0.0636	pCi/g	1.00	0.075		03/06/07
Antimony-125	14234-35-6	LA-508-481	U	-4.10e-04	pCi/g	+4.10e-03	pCi/g	1.00	0.022		03/06/07
Ba-133 by GEA	13981-41-4	LA-508-481	U	6.02e-03	pCi/g	+7.02e-03	pCi/g	1.00	0.011		03/06/07
Cerium-144	14762-78-8	LA-508-481	U	-0.0347	pCi/g	+0.0413	pCi/g	1.00	0.067		03/06/07
Cerium/Praseodymium-144	CE/PR-144	LA-508-481	U	-0.0695	pCi/g	+0.0826	pCi/g	1.00	0.13		03/06/07
Cobalt-60	10198-40-0	LA-508-481	U	1.02e-03	pCi/g	+4.50e-03	pCi/g	1.00	8.0e-03		03/06/07
Cesium-134	13967-70-9	LA-508-481	U	6.80e-03	pCi/g	+5.93e-03	pCi/g	1.00	0.010		03/06/07
Cesium-137	10045-97-3	LA-508-481	U	6.39e-03	pCi/g	+7.41e-03	pCi/g	1.00	8.1e-03		03/06/07
Europium-152	14683-23-9	LA-508-481	U	3.75e-04	pCi/g	+3.75e-03	pCi/g	1.00	0.025		03/06/07
Europium-154	15585-10-1	LA-508-481	U	-3.82e-03	pCi/g	+0.0133	pCi/g	1.00	0.023		03/06/07
Europium-155	14391-16-3	LA-508-481	U	0.0322	pCi/g	+0.0310	pCi/g	1.00	0.037		03/06/07
Potassium-40	13966-00-2	LA-508-481		0.977	pCi/g	+0.175	pCi/g	1.00	0.070		03/06/07
Niobium-94	14681-63-1	LA-508-481	U	-5.80e-04	pCi/g	+4.82e-03	pCi/g	1.00	8.1e-03		03/06/07
Radium-226	13982-63-3	LA-508-481		0.211	pCi/g	+0.0414	pCi/g	1.00	0.017		03/06/07
Radium-228	15262-20-1	LA-508-481		0.179	pCi/g	+0.0443	pCi/g	1.00	0.025		03/06/07
Ruthenium-106	13967-48-1	LA-508-481	U	-0.0176	pCi/g	+0.0450	pCi/g	1.00	0.075		03/06/07
Tin-126	15832-50-5	LA-508-481	U	0.0546	pCi/g	+0.0264	pCi/g	1.00	0.060		03/06/07
Thorium-234	15065-10-8	LA-508-481	U	-0.276	pCi/g	+0.428	pCi/g	1.00	0.66		03/06/07
Uranium-235	15117-96-1	LA-508-481	U	0.0239	pCi/g	+0.0149	pCi/g	1.00	0.072		03/06/07
Zinc-65	13982-39-3	LA-508-481	U	6.29e-03	pCi/g	+0.0115	pCi/g	1.00	0.018		03/06/07
Actinium-228	14331-83-0	LA-508-481		0.179	pCi/g	+0.0443	pCi/g	1.00	0.025		03/06/07

MDL=Minimum Detection Limit

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

RQ=Result Qualifier

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria(inorg)

TP Err=Total Propagated Error

U - Analyzed for but not detected above limiting criteria.(org)

DF=Dilution Factor

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

Report WGPP/ver. 5.2

PROJECT HANFORD MANAGEMENT COMPANY

**WSCF**  
**ANALYTICAL RESULTS REPORT**

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000251  
 Client ID: B1ML89

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		SOIL		DF	MDL	PQL	Analysis Date
				Result	Unit	TP Err	Unit				
Bismuth-212	14913-49-6	LA-508-481		0.172	pCi/g	+0.0751	pCi/g	1.00	0.063		03/06/07
Bismuth-214	14733-03-0	LA-508-481		0.211	pCi/g	+0.0414	pCi/g	1.00	0.017		03/06/07
Lead-212	15092-94-1	LA-508-481		0.202	pCi/g	+0.0314	pCi/g	1.00	0.016		03/06/07
Lead-214	15067-28-4	LA-508-481		0.175	pCi/g	+0.0322	pCi/g	1.00	0.019		03/06/07
Ruthenium-103	13968-53-1	LA-508-481	U	3.28e-04	pCi/g	+3.28e-03	pCi/g	1.00	8.1e-03		03/06/07
Tin-113	13966-06-8	LA-508-481	U	-9.61e-03	pCi/g	+9.61e-03	pCi/g	1.00	0.010		03/06/07
Thallium-208	14913-50-9	LA-508-481		0.0655	pCi/g	+0.0151	pCi/g	1.00	8.0e-03		03/06/07
<b>Plutonium Isotopes by AEA</b>											
Plutonium-238	13981-16-3	LA-508-471	U	1.80e-03	pCi/g	+0.0180	pCi/g	1.00	0.044		03/26/07
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.0360	pCi/g	+0.0191	pCi/g	1.00	0.013		03/26/07
Pu-242 tracer by AEA	PU242	LA-508-471		6.10	pCi/g			1.00	0.013		03/26/07
<b>Strontium 89/90</b>											
Strontium-89/90	SR-RAD	LA-508-415	U	-0.550	pCi/g	+0.440	pCi/g	1.00	0.31		03/08/07
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		100	Percent			1.00	0.0		03/08/07
<b>TC99 by Liquid Scin.</b>											
Technetium-99	14133-76-7	LA-508-421	U	0.200	pCi/g	+0.174	pCi/g	1.00	0.20		03/08/07
<b>Tritium by Liq Sct column prep</b>											
Tritium	10028-17-8	LA-508-421	U	0.500	pCi/g	+1.16	pCi/g	1.00	0.90		03/07/07
<b>Uranium Isotopes by AEA</b>											
Uranium-233/234	U-233/234	LA-508-471		0.0500	pCi/g	+0.0255	pCi/g	1.00	0.019		03/15/07
Uranium-235	15117-96-1	LA-508-471	U	4.50e-03	pCi/g	+9.09e-03	pCi/g	1.00	0.017		03/15/07
Uranium-238	U-238	LA-508-471		0.0230	pCi/g	+0.0172	pCi/g	1.00	0.019		03/15/07
U-232 tracer by AEA	U232	LA-508-471		4.40	pCi/g			1.00	0.039		03/15/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria(inorg)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

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**Report WGPP/ver. 5.2**

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000252  
 Client ID: B1ML90

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix: SOIL		DF	MDL	PQL	Analysis Date	
				Unit	TP Err					
<b>KLAGES</b> <b>WSCF</b>										
Americium by AEA										
Americium-241	14596-10-2	LA-508-471		0.0180	pCi/g	+ -0.0131	pCi/g	1.00	0.013	03/15/07
Am-243 tracer by AEA	AM243	LA-508-471		4.00	pCi/g			1.00	4.8e-03	03/15/07
<b>Gamma Energy Analysis-grd H<sub>2</sub>O</b>										
Americium-241	14596-10-2	LA-508-481	U	-0.0853	pCi/g	+ -0.0853	pCi/g	1.00	0.038	03/06/07
Antimony-125	14234-35-6	LA-508-481	U	-0.0103	pCi/g	+ -0.0223	pCi/g	1.00	0.037	03/06/07
Ba-133 by GEA	13981-41-4	LA-508-481	U	2.06e-03	pCi/g	+ -0.0116	pCi/g	1.00	0.017	03/06/07
Cerium-144	14762-78-8	LA-508-481	U	-8.02e-04	pCi/g	+ -8.02e-03	pCi/g	1.00	0.090	03/06/07
Cerium/Praseodymium-144	CE/PR-144	LA-508-481	U	-1.60e-03	pCi/g	+ -0.0160	pCi/g	1.00	0.18	03/06/07
Cobalt-60	10198-40-0	LA-508-481	U	2.17e-03	pCi/g	+ -7.11e-03	pCi/g	1.00	0.013	03/06/07
Cesium-134	13967-70-9	LA-508-481	U	0.0111	pCi/g	+ -9.48e-03	pCi/g	1.00	0.017	03/06/07
Cesium-137	10045-97-3	LA-508-481	U	-2.78e-03	pCi/g	+ -9.87e-03	pCi/g	1.00	0.014	03/06/07
Europium-152	14683-23-9	LA-508-481	U	1.14e-03	pCi/g	+ -0.0114	pCi/g	1.00	0.042	03/06/07
Europium-154	15585-10-1	LA-508-481	U	-4.51e-03	pCi/g	+ -0.0212	pCi/g	1.00	0.036	03/06/07
Europium-155	14391-16-3	LA-508-481	U	0.0240	pCi/g	+ -0.0273	pCi/g	1.00	0.046	03/06/07
Potassium-40	13966-00-2	LA-508-481		1.14	pCi/g	+ -0.267	pCi/g	1.00	0.11	03/06/07
Niobium-94	14681-63-1	LA-508-481	U	-2.34e-03	pCi/g	+ -7.50e-03	pCi/g	1.00	0.013	03/06/07
Radium-226	13982-63-3	LA-508-481		0.230	pCi/g	+ -0.0482	pCi/g	1.00	0.030	03/06/07
Radium-228	15262-20-1	LA-508-481		0.255	pCi/g	+ -0.0703	pCi/g	1.00	0.042	03/06/07
Ruthenium-106	13967-48-1	LA-508-481	U	-0.0637	pCi/g	+ -0.0787	pCi/g	1.00	0.13	03/06/07
Tin-126	15832-50-5	LA-508-481	U	0.0360	pCi/g	+ -0.0212	pCi/g	1.00	0.040	03/06/07
Thorium-234	15065-10-8	LA-508-481	U	0.103	pCi/g	+ -0.254	pCi/g	1.00	0.39	03/06/07
Uranium-235	15117-96-1	LA-508-481	U	2.22e-03	pCi/g	+ -0.0222	pCi/g	1.00	0.096	03/06/07
Zinc-65	13982-39-3	LA-508-481	U	4.13e-03	pCi/g	+ -0.0187	pCi/g	1.00	0.028	03/06/07
Actinium-228	14331-83-0	LA-508-481		0.255	pCi/g	+ -0.0703	pCi/g	1.00	0.042	03/06/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(inorg)

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**Report WGPP/ver. 5.2**

**PROJECT HANFORD MANAGEMENT COMPANY**

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000252  
 Client ID: B1ML90

KLAGES  
 WSCF

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		SOIL		DF	MDL	PQL	Analysis Date
				Result	Unit	TP Err	Unit				
Bismuth-212	14913-49-6	LA-508-481		0.212	pCi/g	+ -0.170	pCi/g	1.00	0.11		03/06/07
Bismuth-214	14733-03-0	LA-508-481		0.230	pCi/g	+ -0.0482	pCi/g	1.00	0.030		03/06/07
Lead-212	15092-94-1	LA-508-481		0.189	pCi/g	+ -0.0447	pCi/g	1.00	0.024		03/06/07
Lead-214	15067-28-4	LA-508-481		0.225	pCi/g	+ -0.0522	pCi/g	1.00	0.030		03/06/07
Ruthenium-103	13968-53-1	LA-508-481	U	-4.69e-04	pCi/g	+ -4.69e-03	pCi/g	1.00	0.014		03/06/07
Tin-113	13966-06-8	LA-508-481	U	5.09e-03	pCi/g	+ -0.0102	pCi/g	1.00	0.018		03/06/07
Thallium-208	14913-50-9	LA-508-481		0.0638	pCi/g	+ -0.0178	pCi/g	1.00	0.014		03/06/07
<b>Plutonium Isotopes by AEA</b>											
Plutonium-238	13981-16-3	LA-508-471	U	0.0110	pCi/g	+ -0.0312	pCi/g	1.00	0.053		03/16/07
Pu-239/240 by AEA	PU-239/240	LA-508-471	U	0.0110	pCi/g	+ -0.0119	pCi/g	1.00	0.017		03/16/07
Pu-242 tracer by AEA	PU242	LA-508-471		6.20	pCi/g			1.00	4.9e-03		03/16/07
<b>Strontium 89/90</b>											
Strontium-89/90	SR-RAD	LA-508-415	U	-0.380	pCi/g	+ -0.502	pCi/g	1.00	0.34		03/08/07
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		90.8	Percent			1.00	0.0		03/08/07
<b>TC99 by Liquid Scin.</b>											
Technetium-99	14133-76-7	LA-508-421	U	0.00	pCi/g	+ -0.00	pCi/g	1.00	0.20		03/08/07
<b>Tritium by Liq Set column prep</b>											
Tritium	10028-17-8	LA-508-421	U	-0.0380	pCi/g	+ -0.160	pCi/g	1.00	0.90		03/07/07
<b>Uranium Isotopes by AEA</b>											
Uranium-233/234	U-233/234	LA-508-471		0.0460	pCi/g	+ -0.0235	pCi/g	1.00	0.015		03/15/07
Uranium-235	15117-96-1	LA-508-471		0.0280	pCi/g	+ -0.0171	pCi/g	1.00	5.9e-03		03/15/07
Uranium-238	U-238	LA-508-471		0.0240	pCi/g	+ -0.0180	pCi/g	1.00	0.021		03/15/07
U-232 tracer by AEA	U232	LA-508-471		4.40	pCi/g			1.00	0.048		03/15/07

MDL=Minimum Detection Limit

C - The Analyte was found in the Associated Blank.(inorg)

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Report WGPP/ver. 5.2

PROJECT HANFORD MANAGEMENT COMPANY

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000253  
 Client ID: B1MLB0

KLAGES  
WSCF

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		SOIL		DF	MDL	PQL	Analysis Date
				Result	Unit	TP Err	Unit				
<b>Americium by AEA</b>											
Americium-241	14596-10-2	LA-508-471		0.0380	pCi/g	+-0.0175	pCi/g	1.00	0.011		03/15/07
Am-243 tracer by AEA	AM243	LA-508-471		3.90	pCi/g			1.00	4.0e-03		03/15/07
<b>Gamma Energy Analysis-grd H2O</b>											
Americium-241	14596-10-2	LA-508-481	U	-0.122	pCi/g	+-0.122	pCi/g	1.00	0.13		03/06/07
Antimony-125	14234-35-6	LA-508-481	U	-0.0154	pCi/g	+-0.0264	pCi/g	1.00	0.044		03/06/07
Ba-133 by GEA	13981-41-4	LA-508-481	U	3.86e-03	pCi/g	+-0.0143	pCi/g	1.00	0.021		03/06/07
Cerium-144	14762-78-8	LA-508-481	U	-0.0160	pCi/g	+-0.0929	pCi/g	1.00	0.14		03/06/07
Cerium/Praseodymium-144	CE/PR-144	LA-508-481	U	-0.0320	pCi/g	+-0.186	pCi/g	1.00	0.27		03/06/07
Cobalt-60	10198-40-0	LA-508-481	U	-0.0124	pCi/g	+-0.0124	pCi/g	1.00	0.015		03/06/07
Cesium-134	13967-70-9	LA-508-481	U	0.0423	pCi/g	+-0.0148	pCi/g	1.00	0.050		03/06/07
Cesium-137	10045-97-3	LA-508-481		0.242	pCi/g	+-0.0500	pCi/g	1.00	0.017		03/06/07
Europium-152	14683-23-9	LA-508-481	U	3.54e-03	pCi/g	+-0.0354	pCi/g	1.00	0.050		03/06/07
Europium-154	15585-10-1	LA-508-481	U	-0.0224	pCi/g	+-0.0318	pCi/g	1.00	0.051		03/06/07
Europium-155	14391-16-3	LA-508-481	U	0.0845	pCi/g	+-0.0597	pCi/g	1.00	0.072		03/06/07
Potassium-40	13966-00-2	LA-508-481		16.3	pCi/g	+-2.17	pCi/g	1.00	0.14		03/06/07
Niobium-94	14681-63-1	LA-508-481	U	0.0105	pCi/g	+-9.41e-03	pCi/g	1.00	0.016		03/06/07
Radium-226	13982-63-3	LA-508-481		0.616	pCi/g	+-0.113	pCi/g	1.00	0.033		03/06/07
Radium-228	15262-20-1	LA-508-481		0.817	pCi/g	+-0.147	pCi/g	1.00	0.052		03/06/07
Ruthenium-106	13967-48-1	LA-508-481	U	-7.50e-03	pCi/g	+-0.0750	pCi/g	1.00	0.14		03/06/07
Tin-126	15832-50-5	LA-508-481	U	0.203	pCi/g	+-0.0529	pCi/g	1.00	0.30		03/06/07
Thorium-234	15065-10-8	LA-508-481		1.23	pCi/g	+-0.375	pCi/g	1.00	1.1		03/06/07
Uranium-235	15117-96-1	LA-508-481	U	0.103	pCi/g	+-0.0344	pCi/g	1.00	0.14		03/06/07
Zinc-65	13982-39-3	LA-508-481	U	0.0235	pCi/g	+-0.0247	pCi/g	1.00	0.038		03/06/07
Actinium-228	14331-83-0	LA-508-481		0.817	pCi/g	+-0.147	pCi/g	1.00	0.052		03/06/07

MDL=Minimum Detection Limit

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D - Analyte was identified at a secondary dilution factor(inorg)

RQ=Result Qualifier

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Report WGPP/ver. 5.2

PROJECT HANFORD MANAGEMENT COMPANY

# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000253  
 Client ID: B1MLB0

KLAGES  
 WSCF

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Matrix:		SOIL		DF	MDL	PQL	Analysis Date
				Result	Unit	TP Err	Unit				
Bismuth-212	14913-49-6	LA-508-481		0.585	pCi/g	+ -0.186	pCi/g	1.00	0.12		03/06/07
Bismuth-214	14733-03-0	LA-508-481		0.616	pCi/g	+ -0.113	pCi/g	1.00	0.033		03/06/07
Lead-212	15092-94-1	LA-508-481		0.857	pCi/g	+ -0.119	pCi/g	1.00	0.034		03/06/07
Lead-214	15067-28-4	LA-508-481		0.720	pCi/g	+ -0.107	pCi/g	1.00	0.037		03/06/07
Ruthenium-103	13968-53-1	LA-508-481	U	3.34e-03	pCi/g	+ -9.43e-03	pCi/g	1.00	0.016		03/06/07
Tin-113	13966-06-8	LA-508-481	U	-0.0156	pCi/g	+ -0.0126	pCi/g	1.00	0.020		03/06/07
Thallium-208	14913-50-9	LA-508-481		0.261	pCi/g	+ -0.0474	pCi/g	1.00	0.016		03/06/07
<b>Plutonium Isotopes by AEA</b>											
Plutonium-238	13981-16-3	LA-508-471	U	0.0180	pCi/g	+ -0.0259	pCi/g	1.00	0.043		03/16/07
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.0910	pCi/g	+ -0.0346	pCi/g	1.00	4.9e-03		03/16/07
Pu-242 tracer by AEA	PU242	LA-508-471		6.10	pCi/g			1.00	4.9e-03		03/16/07
<b>Strontium 89/90</b>											
Strontium-89/90	SR-RAD	LA-508-415	U	-0.0690	pCi/g	+ -0.460	pCi/g	1.00	0.34		03/08/07
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		91.3	Percent			1.00	0.0		03/08/07
<b>TC99 by Liquid Scin.</b>											
Technetium-99	14133-76-7	LA-508-421	U	0.00	pCi/g	+ -0.00	pCi/g	1.00	0.20		03/08/07
<b>Tritium by Liq Sct column prep</b>											
Tritium	10028-17-8	LA-508-421	U	0.560	pCi/g	+ -0.588	pCi/g	1.00	0.90		03/07/07
<b>Uranium Isotopes by AEA</b>											
Uranium-233/234	U-233/234	LA-508-471		0.130	pCi/g	+ -0.0494	pCi/g	1.00	6.4e-03		03/15/07
Uranium-235	15117-96-1	LA-508-471		0.0210	pCi/g	+ -0.0158	pCi/g	1.00	7.0e-03		03/15/07
Uranium-238	U-238	LA-508-471		0.100	pCi/g	+ -0.0400	pCi/g	1.00	6.4e-03		03/15/07
U-232 tracer by AEA	U232	LA-508-471		4.40	pCi/g			1.00	0.049		03/15/07

MDL=Minimum Detection Limit

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

RQ=Result Qualifier

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria(inorg)

TP Err=Total Propagated Error

U - Analyzed for but not detected above limiting criteria.(org)

DF=Dilution Factor

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

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# WSCF

## ANALYTICAL RESULTS REPORT

Attention: DL KLAGES  
 SAF Number: R07-007  
 Sample #: W070000254  
 Client ID: B1ML98

KLAGES  
 WSCF

Group #: WSCF20070354  
 Department: Radiochemistry  
 Sampled: 03/01/07  
 Received: 03/02/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Tritium by Liq Sct column prep</b>											
Tritium	10028-17-8	LA-508-421	U	0.370	pCi/g	+ -0.862	pCi/g	1.00	0.90		03/07/07

**MDL=Minimum Detection Limit**

C - The Analyte was found in the Associated Blank.(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)

**RQ=Result Qualifier**

N - Spike sample recovery is outside control limits.(inorg)

U - Analyzed for but not detected above limiting criteria.(inorg)

**TP Err=Total Propagated Error**

U - Analyzed for but not detected above limiting criteria.(org)

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

**Report WGPP/ver. 5.2**

**PROJECT HANFORD MANAGEMENT COMPANY**

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**WSCF**  
**ANALYTICAL COMMENT REPORT**

**Attention:** DL KLAGES

**Group #:** WSCF20070354  
**Department:** Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		Organics: All results are moisture corrected and reported on a dry weight basis. cgc
				W070000246-253/GEA batch duplicate is flagged for four nuclides being out of RPD range. Pb214, Bi214, and Ra226 are flagged for poor RPD because the sample is not homogeneous. Bi212 is flagged for poor RPD but the sample activity is low level so the RPD does not apply. lmh
				H-3 LCS recovery is low but only slightly out of range. Since all the other QC checks came out fine, this batch has been accepted. lmh
				W070000246/U235 duplicate is flagged for poor RPD but the sample activity is low level so the RPD doesn't apply. lmh
				Am241 duplicate is flagged for poor RPD however, the sample activity is low level. RPD does not apply to low level samples with high counting error. lmh

**Lab Areas:** VALGROUP - Group Validation  
LOGSAMP - Login for Sample

VALTEST - Test Validation  
LOGTEST - Login for Tests

TESTDATA - Test Data Entry

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# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354

Matrix: SOLID

Test: Americium by AEA

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W070000246</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
DUP	Americium-241	14596-10-2	2.4e-2		RPD			25.455	20.000		03/15/07
DUP	Am-243 tracer by AEA	AM243	3.969	91.910	% Recov	30.000	105.000				03/15/07
SURR	Am-243 tracer by AEA	AM243	3.869	85.310	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000247</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Am-243 tracer by AEA	AM243	3.915	88.580	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000248</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Am-243 tracer by AEA	AM243	3.818	96.350	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000249</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Am-243 tracer by AEA	AM243	3.915	87.380	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000250</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Am-243 tracer by AEA	AM243	3.877	97.720	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000252</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Am-243 tracer by AEA	AM243	3.961	75.080	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000253</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											

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of  
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# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354

Matrix: SOLID

Test: Americium by AEA

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SURR	Am-243 tracer by AEA	AM243	3.907	88.730	% Recov	30.000	105.000				03/15/07

## BATCH QC

BLANK	Americium-241	14596-10-2	U1.3e-2	n/a	pCi/g	-10.000	1000.000				03/15/07
BLANK	Am-243 tracer by AEA	AM243	4.001	74.520	% Recov	30.000	105.000				03/15/07
LCS	Americium-241	14596-10-2	10.6	89.451	% Recov	80.000	120.000				03/15/07
LCS	Am-243 tracer by AEA	AM243	11.1	80.530	% Recov	30.000	105.000				03/15/07

Lab ID: W070000251

## BATCH QC ASSOCIATED WITH SAMPLE

SURR	Am-243 tracer by AEA	AM243	3.93	79.950	% Recov	30.000	105.000				03/26/07
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## BATCH QC

BLANK	Americium-241	14596-10-2	U2e-2	n/a	pCi/g	-10.000	1000.000				03/26/07
BLANK	Am-243 tracer by AEA	AM243	20	86.670	% Recov	30.000	105.000				03/26/07
LCS	Americium-241	14596-10-2	11.5	95.634	% Recov	80.000	120.000				03/26/07
LCS	Am-243 tracer by AEA	AM243	11.1	95.320	% Recov	30.000	105.000				03/26/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354

Matrix: SOLID

Test: Gamma Energy Analysis-grd H<sub>2</sub>O

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W070000246</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
DUP	Actinium-228	14331-83-0	0.6507		RPD			5.398	20.000		03/12/07
DUP	Americium-241	14596-10-2	U3e-3		RPD			n/a	20.000		03/12/07
DUP	Ba-133 by GEA	13981-41-4	U5.025e-4		RPD			n/a	20.000		03/12/07
DUP	Bismuth-212	14913-49-6	0.501		RPD			40.000	20.000 •		03/12/07
DUP	Bismuth-214	14733-03-0	0.5068		RPD			41.823	20.000 •		03/12/07
DUP	Cerium-144	14762-78-8	U-2.775e-2		RPD			n/a	20.000		03/12/07
DUP	Cerium/Praseodymium-144	CE/PR-144	U-5.55e-2		RPD			n/a	20.000		03/12/07
DUP	Cobalt-60	10198-40-0	U5.048e-4		RPD			n/a	20.000		03/12/07
DUP	Cesium-134	13967-70-9	U2.946e-2		RPD			n/a	20.000		03/12/07
DUP	Cesium-137	10045-97-3	0.1599		RPD			7.465	20.000		03/12/07
DUP	Europium-152	14683-23-9	U-8.559e-3		RPD			n/a	20.000		03/12/07
DUP	Europium-154	15585-10-1	U9.386e-3		RPD			n/a	20.000		03/12/07
DUP	Europium-155	14391-16-3	U3.433e-2		RPD			n/a	20.000		03/12/07
DUP	Potassium-40	13966-00-2	12.89		RPD			0.387	20.000		03/12/07
DUP	Niobium-94	14681-63-1	U3.649e-4		RPD			n/a	20.000		03/12/07
DUP	Lead-212	15092-94-1	0.688		RPD			0.276	20.000		03/12/07
DUP	Lead-214	15067-28-4	0.5672		RPD			34.346	20.000 •		03/12/07
DUP	Radium-226	13982-63-3	0.5068		RPD			41.823	20.000 •		03/12/07
DUP	Radium-228	15262-20-1	0.6507		RPD			5.398	20.000		03/12/07
DUP	Ruthenium-103	13968-53-1	U3.433e-4		RPD			n/a	20.000		03/12/07
DUP	Ruthenium-106	13967-48-1	U-2.863e-2		RPD			n/a	20.000		03/12/07
DUP	Antimony-125	14234-35-6	U9.01e-3		RPD			n/a	20.000		03/12/07
DUP	Tin-113	13966-06-8	U-3.654e-3		RPD			n/a	20.000		03/12/07
DUP	Tin-126	15832-50-5	U0.1361		RPD			n/a	20.000		03/12/07
DUP	Thorium-234	15065-10-8	0.724		RPD			n/a	20.000		03/12/07
DUP	Thallium-208	14913-50-9	0.2134		RPD			5.779	20.000		03/12/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354

Matrix: SOLID

Test: Gamma Energy Analysis-grd H<sub>2</sub>O

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
DUP	Uranium-235	15117-96-1	U7.352e-2		RPD			n/a	20.000		03/12/07
DUP	Zinc-65	13982-39-3	U-6.573e-3		RPD			n/a	20.000		03/12/07
<b>BATCH QC</b>											
BLANK	Actinium-228	14331-83-0	4.044e-2	0.040	pCi/g	-10.000	1000.000				03/07/07
BLANK	Americium-241	14596-10-2	U-0.1097	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Ba-133 by GEA	13981-41-4	U-3.275e-4	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Bismuth-212	14913-49-6	U2.863e-2	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Bismuth-214	14733-03-0	8.916e-2	0.089	pCi/g	-10.000	1000.000				03/07/07
BLANK	Cerium-144	14762-78-8	U-2.648e-3	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Cerium/Praseodymium-144	CE/PR-144	U-5.296e-3	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Cobalt-60	10198-40-0	U-9.609e-4	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Cesium-134	13967-70-9	U5.237e-3	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Cesium-137	10045-97-3	U-2.755e-3	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Europium-152	14683-23-9	U-3.491e-3	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Europium-154	15585-10-1	U-2.175e-3	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Europium-155	14391-16-3	U1.559e-2	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Potassium-40	13966-00-2	9.695e-2	0.097	pCi/g	-10.000	1000.000				03/07/07
BLANK	Niobium-94	14681-63-1	U2.043e-3	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Lead-212	15092-94-1	5.488e-2	0.055	pCi/g	-10.000	1000.000				03/07/07
BLANK	Lead-214	15067-28-4	0.1032	0.103	pCi/g	-10.000	1000.000				03/07/07
BLANK	Radium-226	13982-63-3	8.916e-2	0.089	pCi/g	-10.000	1000.000				03/07/07
BLANK	Radium-228	15262-20-1	4.044e-2	0.040	pCi/g	-10.000	1000.000				03/07/07
BLANK	Ruthenium-103	13968-53-1	U3.847e-4	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Ruthenium-106	13967-48-1	U-1.259e-2	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Antimony-125	14234-35-6	U5.217e-3	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Tin-113	13966-06-8	U1.014e-3	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Tin-126	15832-50-5	U-8.935e-3	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Thorium-234	15065-10-8	U-1.1e-2	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Thallium-208	14913-50-9	1.562e-2	0.016	pCi/g	-10.000	1000.000				03/07/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354

Matrix: SOLID

Test: Gamma Energy Analysis-grd H<sub>2</sub>O

Sample Date:

Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD (%)	RPD Limit	RQ	Analysis Date
BLANK	Uranium-235	15117-96-1	U1.819e-2	n/a	pCi/g	-10.000	1000.000				03/07/07
BLANK	Zinc-65	13982-39-3	U-6.866e-4	n/a	pCi/g	-10.000	1000.000				03/07/07
LCS	Americium-241	14596-10-2	4015	102.423	% Recov	80.000	120.000				03/08/07
LCS	Cobalt-60	10198-40-0	4583	109.379	% Recov	80.000	120.000				03/08/07
LCS	Cesium-137	10045-97-3	4114	114.916	% Recov	80.000	120.000				03/08/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354

Matrix: SOLID

Test: Plutonium Isotopes by AEA

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W070000246</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
DUP	Plutonium-238	13981-16-3	U3.4e-3		RPD			n/a	20.000		03/15/07
DUP	Pu-239/240 by AEA	PU-239/240	5.8e-2		RPD			18.868	20.000		03/15/07
DUP	Pu-242 tracer by AEA	PU242	6.192	77.960	% Recov	30.000	105.000				03/15/07
SURR	Pu-242 tracer by AEA	PU242	6.036	87.990	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000247</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Pu-242 tracer by AEA	PU242	6.107	92.200	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000248</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Pu-242 tracer by AEA	PU242	5.955	80.520	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000249</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Pu-242 tracer by AEA	PU242	6.107	77.670	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000250</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Pu-242 tracer by AEA	PU242	6.048	89.160	% Recov	30.000	105.000				03/16/07
<b>Lab ID: W070000252</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Pu-242 tracer by AEA	PU242	6.179	95.570	% Recov	30.000	105.000				03/16/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354

Matrix: SOLID

Test: Plutonium Isotopes by AEA

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W070000253</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Pu-242 tracer by AEA	PU242	6.095	91.580	% Recov	30.000	105.000				03/16/07
<b>BATCH QC</b>											
BLANK	Plutonium-238	13981-16-3	U2.9e-3	n/a	pCi/g	-10.000	1000.000				03/15/07
BLANK	Pu-239/240 by AEA	PU-239/240	U2.9e-3	n/a	pCi/g	-10.000	1000.000				03/15/07
BLANK	Pu-242 tracer by AEA	PU242	6.241	97.480	% Recov	30.000	105.000				03/15/07
LCS	Pu-239/240 by AEA	PU-239/240	12.97	100.973	% Recov	80.000	120.000				03/15/07
LCS	Pu-242 tracer by AEA	PU242	17.32	93.140	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000251</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Pu-242 tracer by AEA	PU242	6.131	89.680	% Recov	30.000	105.000				03/26/07
<b>BATCH QC</b>											
BLANK	Plutonium-238	13981-16-3	U-9.2e-3	n/a	pCi/g	-10.000	1000.000				03/26/07
BLANK	Pu-239/240 by AEA	PU-239/240	U2.8e-2	n/a	pCi/g	-10.000	1000.000				03/26/07
BLANK	Pu-242 tracer by AEA	PU242	31.21	92.720	% Recov	30.000	105.000				03/26/07
LCS	Pu-239/240 by AEA	PU-239/240	12.22	95.134	% Recov	80.000	120.000				03/26/07
LCS	Pu-242 tracer by AEA	PU242	17.32	89.200	% Recov	30.000	105.000				03/26/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354

Matrix: SOLID

Test: Strontium 89/90

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W070000246</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
DUP	Sr-85 Tracer by Beta Counting	SR85	102.0	102.000	% Recov	30.000	105.000				03/08/07
DUP	Strontium-89/90	SR-RAD	U-1.8E-02		RPD			n/a	20.000		03/08/07
SURR	Sr-85 Tracer by Beta Counting	SR85	100.8	100.800	% Recov	30.000	105.000				03/08/07
<b>Lab ID: W070000247</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Sr-85 Tracer by Beta Counting	SR85	95.2	95.200	% Recov	30.000	105.000				03/08/07
<b>Lab ID: W070000248</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Sr-85 Tracer by Beta Counting	SR85	97.1	97.100	% Recov	30.000	105.000				03/08/07
<b>Lab ID: W070000249</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Sr-85 Tracer by Beta Counting	SR85	93.3	93.300	% Recov	30.000	105.000				03/08/07
<b>Lab ID: W070000250</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Sr-85 Tracer by Beta Counting	SR85	96.7	96.700	% Recov	30.000	105.000				03/08/07
<b>Lab ID: W070000251</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	Sr-85 Tracer by Beta Counting	SR85	100.2	100.200	% Recov	30.000	105.000				03/08/07
<b>Lab ID: W070000252</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354

Matrix: SOLID

Test: Strontium 89/90

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SURR	Sr-85 Tracer by Beta Counting	SR85	90.8	90.800	% Recov	30.000	105.000				03/08/07

Lab ID: W070000253

## BATCH QC ASSOCIATED WITH SAMPLE

SURR	Sr-85 Tracer by Beta Counting	SR85	91.3	91.300	% Recov	30.000	105.000				03/08/07
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## BATCH QC

BLANK	Sr-85 Tracer by Beta Counting	SR85	98.5	98.500	% Recov	30.000	105.000				03/08/07
BLANK	Strontium-89/90	10098-97-2	U-3.8E-01	n/a	pCi/g	-10.000	300.000				03/08/07
LCS	Sr-85 Tracer by Beta Counting	SR85	94.4	94.400	% Recov	30.000	105.000				03/08/07
LCS	Strontium-89/90	10098-97-2	84.3	98.137	% Recov	80.000	120.000				03/08/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354

Matrix: SOLID

Test: TC99 by Liquid Scin.

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W070000246</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
DUP	Technetium-99	14133-76-7	00.1		RPD			n/a	20.000		03/08/07
MS	Technetium-99	14133-76-7	52.03	96.352	% Recov	75.000	125.000				03/08/07
<b>BATCH QC</b>											
BLANK	Technetium-99	14133-76-7	00.0	n/a	pCi/g	-10.000	1000.000				03/08/07
LCS	Technetium-99	14133-76-7	11.9	99.167	% Recov	80.000	120.000				03/08/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354

Matrix: SOLID

Test: Tritium by Liq Sct column prep

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
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Lab ID: W070000246

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Tritium	10028-17-8	U7.4e-02	n/a	Ratio	0.000	20.000			03/07/07
MS	Tritium	10028-17-8	1161.04	78.095	% Recov	75.000	125.000			03/07/07

## BATCH QC

BLANK	Tritium	10028-17-8	U2.5E-02	n/a	pCi/g	-10.000	1000.000			03/07/07
LCS	Tritium	10028-17-8	2762.30	75.206	% Recov	80.000	120.000			03/07/07

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# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354  
 Matrix: SOLID  
 Test: Uranium Isotopes by AEA

Sample Date: 03/01/07  
 Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W070000246</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
DUP	U-232 tracer by AEA	U232	4.45	85.502	% Recov	30.000	105.000				03/15/07
DUP	Uranium-233/234	U-233/234	0.14		RPD			6.897	20.000		03/15/07
DUP	Uranium-235	15117-96-1	1.3e-2		RPD			59.459	20.000		03/15/07
DUP	Uranium-238	U-238	0.15		RPD			14.286	20.000		03/15/07
SURR	U-232 tracer by AEA	U232	4.341	74.440	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000247</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	U-232 tracer by AEA	U232	4.391	88.890	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000248</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	U-232 tracer by AEA	U232	4.283	92.970	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000249</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	U-232 tracer by AEA	U232	4.391	87.510	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000250</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	U-232 tracer by AEA	U232	4.349	83.690	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000251</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	U-232 tracer by AEA	U232	4.409	77.910	% Recov	30.000	105.000				03/15/07

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070354

Matrix: SOLID

Test: Uranium Isotopes by AEA

Sample Date: 03/01/07

Receive Date: 03/02/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W070000252</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	U-232 tracer by AEA	U232	4.444	82.910	% Recov	30.000	105.000				03/15/07
<b>Lab ID: W070000253</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	U-232 tracer by AEA	U232	4.383	66.670	% Recov	30.000	105.000				03/15/07
<b>BATCH QC</b>											
BLANK	U-232 tracer by AEA	U232	4.488	81.140	% Recov	30.000	105.000				03/15/07
BLANK	Uranium-233/234	13966-29-5	8.1e-3	n/a	pCi/g	-10.000	1000.000				03/15/07
BLANK	Uranium-235	15117-96-1	1.8e-2	n/a	pCi/g	-10.000	1000.000				03/15/07
BLANK	Uranium-238	24678-82-8	2e-3	n/a	pCi/g	-10.000	1000.000				03/15/07
LCS	U-232 tracer by AEA	U232	12.45	30.930	% Recov	30.000	105.000				03/15/07
LCS	Uranium-233/234	13966-29-5	n/a	n/a	% Recov	75.000	125.000				03/15/07
LCS	Uranium-235	15117-96-1	n/a	n/a	% Recov	75.000	125.000				03/15/07
LCS	Uranium-238	24678-82-8	19	100.237	% Recov	80.000	120.000				03/15/07

**WSCF**  
**TENTATIVELY IDENTIFIED PEAK REPORT**

**Attention:**  
**Project Number**

**Group #:** WSCF0  
**Department:** Miscellaneous

Sample #	Client ID	Test Name	Peak Name	CAS#	RT	RQ	Result	Units
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**RQ=Result Qualifier**

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**WSCF**  
**METHOD REFERENCES REPORT**

Department: Organic

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

<b>LA-523-427</b>	<b>LA-523-427: POLYCHLORINATED BIPHENYLS (PCBs) BY GAS CHROMATOGRAPHY</b>
EPA SW-846 3510C	SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION
EPA SW-846 3545	PRESSURIZED FLUID EXTRACTION (PFE)
EPA SW-846 3665A	SULFURIC ACID/PERMANGANATE CLEANUP
EPA SW-846 8000B	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS
EPA SW-846 8082A	POLYCHLORINATED BIPHENYLS (PCBs) BY GAS CHROMATOGRAPHY
HEIS 8082_PCB_GC	Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at  
<http://www2.rl.gov/phmc/as-dol>.

# **WSCF**

## **METHOD REFERENCES REPORT**

### **Department: Radiochemistry**

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-508-415	LA-508-415: OPERATION OF THE PROTEAN 2-INCH ALPHA/BETA COUNTING SYSTEM FOR GROSS HEIS ALPHA_GPC                    GROSS ALPHA GPC HEIS BETA_GPC                    GROSS BETA GPC HEIS SRTOT_SEP_PRECIP_GPC                    Plutonium 89/90
LA-508-421	LA-508-421: OPERATION OF THE TRI-CARB MODEL 2500TR LIQUID SCINTILLATION ANALYZER HEIS ALPHA_LSC                    A/B Liquid Scintillation HEIS BETA_LSC                    A/B Liquid Scintillation HEIS TC99_3MDSK_LSC            TC99 by Liquid Scintillation HEIS TRITIUM_EIE_LSC            Tritium Liquid Scintillation
LA-508-471	LA-508-471: ALPHA ENERGY ANALYZER DATA ACQUISITION AND SYSTEM CHECKOUT USING ALP HEIS PUISO_IE_PRECIP_AEA                    Plutonium by Alpha Energy Analysis HEIS RAISO_AEA                    Radium-226
LA-508-481	LA-508-481: GAMMA ENERGY ANALYSIS USING PROCOUNT SOFTWARE HEIS GAMMA_GS                    Gamma Emission Spectrometry

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at <http://www2.rl.gov/phmc/as-dol>.

**WSCF**  
**METHOD REFERENCES REPORT**

Department: Inorganic

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

<b>LA-265-403</b>	LA-265-403: Hexavalent Chromium analysis by Spectrophotometer EPA SW-846 7196A HEIS 7196_CR6	HEXAVALENT CHROMIUM Hexavalent Chromium
<b>LA-505-412</b>	LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY EPA-600/R-94-111 200.8 HEIS 200.8_METALS_ICPMS	DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY COUPLED PLASMA - MASS SPECTROMETRY Inductively Coupled Plasma - Mass Spectrometry
<b>LA-519-412</b>	LA-519-412: TOTAL RESIDUE/% SOLIDS DRIED AT 103 - 105 C EPA-600/4-79-020 160.1 EPA-600/4-79-020 160.3 HEIS 160.1_TDS Standard Methods 2540B	Residual, Filterable RESIDUE, TOTAL Residual, Filterable Total Solids Dried at 103-105 C

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at  
<http://www2.rl.gov/phmc/as-dol>.

Department: Organic

## W13q Worklist/Batch/QC Report for Group# WSCF20070354

WL#	S#	Batch	QC#	Tray	Type	Sample#	Test
	35610			BLANK			PCBs complete list
	35610			LCS			PCBs complete list
	35610			MS		W070000217	PCBs complete list
	35610			MSD		W070000217	PCBs complete list
	35610			SPK-RPD		W070000217	PCBs complete list
	35610			SAMPLE		W070000246	PCBs complete list
	35610			SURR		W070000246	PCBs complete list
	35610			SAMPLE		W070000247	PCBs complete list
	35610			SURR		W070000247	PCBs complete list
	35610			SAMPLE		W070000248	PCBs complete list
	35610			SURR		W070000248	PCBs complete list
	35610			SAMPLE		W070000249	PCBs complete list
	35610			SURR		W070000249	PCBs complete list
	35610			SAMPLE		W070000250	PCBs complete list
	35610			SURR		W070000250	PCBs complete list
	35610			SAMPLE		W070000251	PCBs complete list
	35610			SURR		W070000251	PCBs complete list
	35610			SAMPLE		W070000252	PCBs complete list
	35610			SURR		W070000252	PCBs complete list
	35610			SAMPLE		W070000253	PCBs complete list
	35610			SURR		W070000253	PCBs complete list

Department: Radiochemistry

## W13q Worklist/Batch/QC Report for Group# WSCF20070354

WL#	S#	Batch	QC#	Tray	Type	Sample#	Test
31079	3	31457	35640	BLANK			Gamma Energy Analysis-grd H2O
31079	2	31457	35640	LCS			Gamma Energy Analysis-grd H2O
31079	1	31457	35640	DUP		W070000246	Gamma Energy Analysis-grd H2O
31079	4	31457	35640	SAMPLE		W070000246	Gamma Energy Analysis-grd H2O
31079	5	31457	35640	SAMPLE		W070000247	Gamma Energy Analysis-grd H2O
31079	6	31457	35640	SAMPLE		W070000248	Gamma Energy Analysis-grd H2O
31079	7	31457	35640	SAMPLE		W070000249	Gamma Energy Analysis-grd H2O
31079	8	31457	35640	SAMPLE		W070000250	Gamma Energy Analysis-grd H2O
31079	9	31457	35640	SAMPLE		W070000251	Gamma Energy Analysis-grd H2O
31079	10	31457	35640	SAMPLE		W070000252	Gamma Energy Analysis-grd H2O
31079	11	31457	35640	SAMPLE		W070000253	Gamma Energy Analysis-grd H2O
31138	1	31518	35648	BLANK			TC99 by Liquid Scin.
31138	4	31518	35648	LCS			TC99 by Liquid Scin.
31138	3	31518	35648	DUP		W070000246	TC99 by Liquid Scin.
31138	2	31518	35648	MS		W070000246	TC99 by Liquid Scin.
31138	5	31518	35648	SAMPLE		W070000246	TC99 by Liquid Scin.
31138	6	31518	35648	SAMPLE		W070000247	TC99 by Liquid Scin.
31138	7	31518	35648	SAMPLE		W070000248	TC99 by Liquid Scin.
31138	8	31518	35648	SAMPLE		W070000249	TC99 by Liquid Scin.
31138	9	31518	35648	SAMPLE		W070000250	TC99 by Liquid Scin.
31138	10	31518	35648	SAMPLE		W070000251	TC99 by Liquid Scin.
31138	11	31518	35648	SAMPLE		W070000252	TC99 by Liquid Scin.
31138	12	31518	35648	SAMPLE		W070000253	TC99 by Liquid Scin.
31190	1	31568	35710	BLANK			Uranium Isotopics by AEA
31190	2	31568	35710	LCS			Uranium Isotopics by AEA
31190	3	31568	35710	DUP		W070000246	Uranium Isotopics by AEA
31190	4	31568	35710	SAMPLE		W070000246	Uranium Isotopics by AEA
31190	5	31568	35710	SURR		W070000246	Uranium Isotopics by AEA
31190	6	31568	35710	SAMPLE		W070000247	Uranium Isotopics by AEA
31190	7	31568	35710	SURR		W070000247	Uranium Isotopics by AEA
31190	8	31568	35710	SAMPLE		W070000248	Uranium Isotopics by AEA
31190	9	31568	35710	SURR		W070000248	Uranium Isotopics by AEA
31190	10	31568	35710	SAMPLE		W070000249	Uranium Isotopics by AEA
31190	11	31568	35710	SURR		W070000249	Uranium Isotopics by AEA
31190	12	31568	35710	SAMPLE		W070000250	Uranium Isotopics by AEA
31190	13	31568	35710	SURR		W070000250	Uranium Isotopics by AEA
31190	14	31568	35710	SAMPLE		W070000251	Uranium Isotopics by AEA
31190	15	31568	35710	SURR		W070000251	Uranium Isotopics by AEA
31190	16	31568	35710	SAMPLE		W070000252	Uranium Isotopics by AEA
31190	17	31568	35710	SURR		W070000252	Uranium Isotopics by AEA
31190	18	31568	35710	SAMPLE		W070000253	Uranium Isotopics by AEA
31190	19	31568	35710	SURR		W070000253	Uranium Isotopics by AEA
31144	1	31522	35712	BLANK			Tritium by Liq Sct column prep
31144	4	31522	35712	LCS			Tritium by Liq Sct column prep
31144	3	31522	35712	DUP		W070000246	Tritium by Liq Sct column prep
31144	2	31522	35712	MS		W070000246	Tritium by Liq Sct column prep
31144	5	31522	35712	SAMPLE		W070000246	Tritium by Liq Sct column prep
31144	6	31522	35712	SAMPLE		W070000247	Tritium by Liq Sct column prep
31144	7	31522	35712	SAMPLE		W070000248	Tritium by Liq Sct column prep

31144	8	31522	35712	SAMPLE	W070000249	Tritium by Liq Sct column prep
31144	9	31522	35712	SAMPLE	W070000250	Tritium by Liq Sct column prep
31144	10	31522	35712	SAMPLE	W070000251	Tritium by Liq Sct column prep
31144	11	31522	35712	SAMPLE	W070000252	Tritium by Liq Sct column prep
31144	12	31522	35712	SAMPLE	W070000253	Tritium by Liq Sct column prep
31144	13	31522	35712	SAMPLE	W070000254	Tritium by Liq Sct column prep
31239	1	31507	35717	BLANK		Strontium 89/90
31239	2	31507	35717	LCS		Strontium 89/90
31239	3	31507	35717	DUP	W070000246	Strontium 89/90
31239	4	31507	35717	SAMPLE	W070000246	Strontium 89/90
31239	5	31507	35717	SURR	W070000246	Strontium 89/90
31239	6	31507	35717	SAMPLE	W070000247	Strontium 89/90
31239	7	31507	35717	SURR	W070000247	Strontium 89/90
31239	8	31507	35717	SAMPLE	W070000248	Strontium 89/90
31239	9	31507	35717	SURR	W070000248	Strontium 89/90
31239	10	31507	35717	SAMPLE	W070000249	Strontium 89/90
31239	11	31507	35717	SURR	W070000249	Strontium 89/90
31239	12	31507	35717	SAMPLE	W070000250	Strontium 89/90
31239	13	31507	35717	SURR	W070000250	Strontium 89/90
31239	14	31507	35717	SAMPLE	W070000251	Strontium 89/90
31239	15	31507	35717	SURR	W070000251	Strontium 89/90
31239	16	31507	35717	SAMPLE	W070000252	Strontium 89/90
31239	17	31507	35717	SURR	W070000252	Strontium 89/90
31239	18	31507	35717	SAMPLE	W070000253	Strontium 89/90
31239	19	31507	35717	SURR	W070000253	Strontium 89/90
31191	1	31569	35747	BLANK		Plutonium Isotopics by AEA
31191	2	31569	35747	LCS		Plutonium Isotopics by AEA
31191	3	31569	35747	DUP	W070000246	Plutonium Isotopics by AEA
31191	4	31569	35747	SAMPLE	W070000246	Plutonium Isotopics by AEA
31191	5	31569	35747	SURR	W070000246	Plutonium Isotopics by AEA
31191	6	31569	35747	SAMPLE	W070000247	Plutonium Isotopics by AEA
31191	7	31569	35747	SURR	W070000247	Plutonium Isotopics by AEA
31191	8	31569	35747	SAMPLE	W070000248	Plutonium Isotopics by AEA
31191	9	31569	35747	SURR	W070000248	Plutonium Isotopics by AEA
31191	10	31569	35747	SAMPLE	W070000249	Plutonium Isotopics by AEA
31191	11	31569	35747	SURR	W070000249	Plutonium Isotopics by AEA
31191	12	31569	35747	SAMPLE	W070000250	Plutonium Isotopics by AEA
31191	13	31569	35747	SURR	W070000250	Plutonium Isotopics by AEA
31191	17	31569	35747	SAMPLE	W070000252	Plutonium Isotopics by AEA
31191	16	31569	35747	SURR	W070000252	Plutonium Isotopics by AEA
31191	18	31569	35747	SAMPLE	W070000253	Plutonium Isotopics by AEA
31191	19	31569	35747	SURR	W070000253	Plutonium Isotopics by AEA
31192	1	31570	35748	BLANK		Americium by AEA
31192	2	31570	35748	LCS		Americium by AEA
31192	3	31570	35748	DUP	W070000246	Americium by AEA
31192	4	31570	35748	SAMPLE	W070000246	Americium by AEA
31192	5	31570	35748	SURR	W070000246	Americium by AEA
31192	6	31570	35748	SAMPLE	W070000247	Americium by AEA
31192	7	31570	35748	SURR	W070000247	Americium by AEA
31192	8	31570	35748	SAMPLE	W070000248	Americium by AEA
31192	9	31570	35748	SURR	W070000248	Americium by AEA
31192	10	31570	35748	SAMPLE	W070000249	Americium by AEA
31192	11	31570	35748	SURR	W070000249	Americium by AEA
31192	12	31570	35748	SAMPLE	W070000250	Americium by AEA
31192	13	31570	35748	SURR	W070000250	Americium by AEA
31192	16	31570	35748	SAMPLE	W070000252	Americium by AEA
31192	17	31570	35748	SURR	W070000252	Americium by AEA

31192	18	31570	35748	SAMPLE	W070000253	Americium by AEA
31192	19	31570	35748	SURR	W070000253	Americium by AEA
31288	1	31665	35815	BLANK		Plutonium Isotopics by AEA
31288	2	31665	35815	LCS		Plutonium Isotopics by AEA
31288	5	31665	35815	SAMPLE	W070000251	Plutonium Isotopics by AEA
31288	6	31665	35815	SURR	W070000251	Plutonium Isotopics by AEA
31289	1	31666	35821	BLANK		Americium by AEA
31289	2	31666	35821	LCS		Americium by AEA
31289	5	31666	35821	SAMPLE	W070000251	Americium by AEA
31289	6	31666	35821	SURR	W070000251	Americium by AEA

Department: Inorganic

## W13q Worklist/Batch/QC Report for Group# WSCF20070354

WL#	S#	Batch	QC#	Tray	Type	Sample#	Test
				SAMPLE		W070000246	Percent Solids
				SAMPLE		W070000247	Percent Solids
				SAMPLE		W070000248	Percent Solids
				SAMPLE		W070000249	Percent Solids
				SAMPLE		W070000250	Percent Solids
				SAMPLE		W070000251	Percent Solids
				SAMPLE		W070000252	Percent Solids
				SAMPLE		W070000253	Percent Solids
31106	1	31485	35586	BLANK			ICP-200.8 MS All possible meta
31106	2	31485	35586	LCS			ICP-200.8 MS All possible meta
31106	4	31485	35586	MS		W070000217	ICP-200.8 MS All possible meta
31106	5	31485	35586	MSD		W070000217	ICP-200.8 MS All possible meta
31106	5	31485	35586	SPK-RPD		W070000217	ICP-200.8 MS All possible meta
31106	13	31485	35586	SAMPLE		W070000246	ICP-200.8 MS All possible meta
31106	14	31485	35586	SAMPLE		W070000247	ICP-200.8 MS All possible meta
31106	15	31485	35586	SAMPLE		W070000248	ICP-200.8 MS All possible meta
31106	16	31485	35586	SAMPLE		W070000249	ICP-200.8 MS All possible meta
31106	17	31485	35586	SAMPLE		W070000250	ICP-200.8 MS All possible meta
31106	18	31485	35586	SAMPLE		W070000251	ICP-200.8 MS All possible meta
31106	19	31485	35586	SAMPLE		W070000252	ICP-200.8 MS All possible meta
31106	20	31485	35586	SAMPLE		W070000253	ICP-200.8 MS All possible meta
31214	2	31592	35696	BLNK-PREP			Hexavalent chromium
31214	3	31592	35696	LCS			Hexavalent chromium
31214	9	31592	35696	SAMPLE		W070000246	Hexavalent chromium
31214	10	31592	35696	SAMPLE		W070000247	Hexavalent chromium
31214	11	31592	35696	SAMPLE		W070000248	Hexavalent chromium
31214	12	31592	35696	SAMPLE		W070000249	Hexavalent chromium
31214	13	31592	35696	SAMPLE		W070000250	Hexavalent chromium
31214	5	31592	35696	DUP		W070000251	Hexavalent chromium
31214	6	31592	35696	MS		W070000251	Hexavalent chromium
31214	7	31592	35696	MSD		W070000251	Hexavalent chromium
31214	4	31592	35696	SAMPLE		W070000251	Hexavalent chromium
31214	8	31592	35696	SPK-POST		W070000251	Hexavalent chromium
31214	7	31592	35696	SPK-RPD		W070000251	Hexavalent chromium
31214	14	31592	35696	SAMPLE		W070000252	Hexavalent chromium
31214	15	31592	35696	SAMPLE		W070000253	Hexavalent chromium

**M4W41-SLF-07-183**

**ATTACHMENT 4**

**SAMPLE RECEIPT INFORMATION**

Consisting of 15 pages  
Including cover page

**Waste Sampling and Characterization Facility**

P.O. BOX 1970 S3-30, Richland, WA 99352  
PHONE: (509) 373-7004/FAX: (509) 373-7134

3/19/07

**ACKNOWLEDGMENT OF SAMPLES RECEIVED**

FILED

**PROJECT HANFORD MANAGEMENT COMPANY**

RICHLAND, WA 99354  
Attn: DL KLAGES

Customer Code: PHMC-MISC  
PO#: 122333/ES20  
Group#: 20070354

The following samples were received from you on 03/02/07. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
W070000246	B1ML84	KLAGES @2008 @H3-33	Solid, or handle as if solid @AEA-30 @AEA-31 @AEA-32 @GEA-GPP @PCBGPP @SR89_90 @TC99-30 CR+6 PERS	03/01/07
W070000247	B1ML85	KLAGES @2008 @H3-33	Solid, or handle as if solid @AEA-30 @AEA-31 @AEA-32 @GEA-GPP @PCBGPP @SR89_90 @TC99-30 CR+6 PERS	03/01/07
W070000248	B1ML86	KLAGES @2008 @H3-33	Solid, or handle as if solid @AEA-30 @AEA-31 @AEA-32 @GEA-GPP @PCBGPP @SR89_90 @TC99-30 CR+6 PERS	03/01/07
W070000249	B1ML87	KLAGES @2008 @H3-33	Solid, or handle as if solid @AEA-30 @AEA-31 @AEA-32 @GEA-GPP @PCBGPP @SR89_90 @TC99-30 CR+6 PERS	03/01/07
W070000250	B1ML88	KLAGES @2008 @H3-33	Solid, or handle as if solid @AEA-30 @AEA-31 @AEA-32 @GEA-GPP @PCBGPP @SR89_90 @TC99-30 CR+6 PERS	03/01/07
W070000251	B1ML89	KLAGES @2008 @H3-33	Solid, or handle as if solid @AEA-30 @AEA-31 @AEA-32 @GEA-GPP @PCBGPP @SR89_90 @TC99-30 CR+6 PERS	03/01/07
W070000252	B1ML90	KLAGES @2008 @H3-33	Solid, or handle as if solid @AEA-30 @AEA-31 @AEA-32 @GEA-GPP @PCBGPP @SR89_90 @TC99-30 CR+6 PERS	03/01/07
W070000253	B1ML90	KLAGES @2008 @H3-33	Solid, or handle as if solid @AEA-30 @AEA-31 @AEA-32 @GEA-GPP @PCBGPP @SR89_90 @TC99-30 CR+6 PERS	03/01/07
W070000254	B1ML98	KLAGES @H3-33	Solid, or handle as if solid @PCBGPP @SR89_90 @TC99-30 CR+6 PERS	03/01/07

**Test Acronym Description**

Test Acronym	Description
@2008	ICP-200.8 MS All possible meta
@AEA-30	Plutonium Isotopics by AEA
@AEA-31	Americium by AEA

PROJECT HANFORD MANAGEMENT COMPANY

RICHLAND, WA 99354  
Attn: DL KLAGES

Customer Code: PHMC-MISC  
PO#: 122333/ES20  
Group#: 20070354

Test Acronym Description

Test Acronym      Description

@AEA-32	Uranium Isotopics by AEA
@GEA-GPP	Gamma Energy Analysis-grd H2O
@H3-33	Tritium by Liq Sct column prep
@PCBGPP	PCBs complete list
@SR89_90	Strontium 89/90
@TC99-30	TC99 by Liquid Scin.
CR+6	Hexavalent chromium
PERSOLID	Percent Solids

COLLECTOR HOGAN, JG	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days		
SAMPLING LOCATION 216-N-3	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses		SAF NO. R07-007	AIR QUALITY			
ICE CHEST NO.	FIELD LOGBOOK NO. <i>HNF-N-507 3</i>	COA 12233ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE	BILL OF LADING/AIR BILL NO. <i>N/A</i>	<i>N/A</i>		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. <i>N/A</i>						
MATRIX* OL = OTHER LIQUID OS = OTHER SOLID S = SOIL W = WATER	SPECIAL HANDLING AND/OR STORAGE <i>Z0070354</i>		POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				
SAMPLE NO.	LAB ID	MATRIX* S	SAMPLE DATE <i>3-1-07 0835</i>	SAMPLE TIME	NO./TYPE CONTAINER(S) 1X60mL G/P	ANALYSIS ICP/MS - 200.8 (TAL) {Ba, Cd, Cr, Mn, Sb, Zn} ICP/MS - 200.8 (Add-on) {As, Pb, Th} ICP/MS - 200.8 (Hg) {Hg}	PRESERVATION None
B1ML84		S			1X60mL G/P	Chromium Hex - 7196;	Cool 4C
B1ML84		S			1X60mL aG	PCBs - 8082;	Cool 4C
B1ML84		S			1X500mL Square Bottle - Poly	Gamma Spectroscopy {Co-60, Cs-137, Eu-152, Eu-154, Eu-155}	None
B1ML84		S			1X60mL G/P	Americium-241;	None
B1ML84		S			1X60mL G/P	Isotopic Plutonium;	Initial Date
B1ML84		S			1X60mL G/P	Isotopic Uranium;	None
				<b>SIGN/ PRINT NAMES</b>		<b>SPECIAL INSTRUCTIONS</b>	
RELINQUISHED BY/REMOVED FROM <i>J.G. Hogan</i>		DATE/TIME <i>100</i>	RECEIVED BY/STORED IN <i>KB</i>	DATE/TIME <i>100</i>	RECEIVED BY/STORED IN <i>KB</i>	DATE/TIME <i>MAR 02 2007</i>	** Reporting format the same as GPP, including QC.
Fluor Hanford		DATE/TIME <i>100</i>	RECEIVED BY/STORED IN <i>KB</i>	DATE/TIME <i>100</i>	RECEIVED BY/STORED IN <i>KB</i>	DATE/TIME <i>MAR 02 2007</i>	** STL is to send a copy of chain of custody (COC) to John Trechter within 24 hours of sample receipt and copy ^CPP Sample Management mailbox.
RELINQUISHED BY/REMOVED FROM		DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** WSCF will send copies of COC to John Trechter and copy ^CPP Sample Management mailbox.
RELINQUISHED BY/REMOVED FROM		DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The Fluor Hanford samplers shall provide copies of all field documents to Steve Trent.
RELINQUISHED BY/REMOVED FROM		DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** Final reports are to be uploaded into HEIS.
RELINQUISHED BY/REMOVED FROM		DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** Samples WILL NOT be taken using the multi-increment sampling technique.
LABORATORY SECTION <i>66</i>	RECEIVED BY			TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD			DISPOSED BY		DATE/TIME	

COLLECTOR HOGAN, JG	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND		
SAMPLING LOCATION 216-N-3	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses	SAF NO. R07-007	AIR QUALITY	15 Days / 15 Days			
ICE CHEST NO.	FIELD LOGBOOK NO. <b>HNF-N-507 3</b>	COA 122333ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE				
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. <b>N/A</b>	BILL OF LADING/AIR BILL NO. <b>N/A</b>					
MATRIX* OL = OTHER LIQUID OS = OTHER SOLID S = SOIL W = WATER	SPECIAL HANDLING AND/OR STORAGE						
POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)							
SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1ML84		S	<b>3-1-07 0835</b>		1X60mL G/P	Strontium-89,90 -- Total Sr;	None
B1ML84		S			1X60mL G/P	Technetium-99;	None
B1ML84		S			1X250mL G	Tritium - Ion Ex (H-3)	None
B1ML85		S	<b>247</b>	<b>0940</b>	1X60mL G/P	ICP/MS - 200.8 (TAL) {Ba, Cd, Cr, Mn, Sb, Zn} ICP/MS - 200.8 (Add-on) {As, Pb, Th} ICP/MS - 200.8 (Hg) {Hg}	None
B1ML85		S			1X60mL G/P	Chromium Hex - 7196;	Cool 4C
B1ML85		S			1X60mL aG	PCBs - 8082;	Cool 4C
B1ML85		S			1X500mL Square Bottle - Poly	Gamma Spectroscopy {Co-60, Cs-137, Eu-152, Eu-154, Eu-155}	None
CHAIN OF POSSESSION						SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM <b>J.G. Hogan</b>	DATE/TIME <b>1/00</b>	RECEIVED BY/STORED IN <b>K. Borchers</b>	DATE/TIME <b>1/00</b>	SPECIAL INSTRUCTIONS			
Fluor Hanford	<b>MAR 02 2007</b>		<b>MAR 02 2007</b>	<p>** Reporting format the same as GPP, including QC.</p> <p>** STL is to send a copy of chain of custody (COC) to John Trechter within 24 hours of sample receipt and copy ^CPP Sample Management mailbox.</p> <p>** WSCF will send copies of COC to John Trechter and copy ^CPP Sample Management mailbox.</p> <p>** The Fluor Hanford samplers shall provide copies of all field documents to Steve Trent.</p> <p>** Final reports are to be uploaded into HEIS.</p> <p>** Samples WILL NOT be taken using the multi-increment sampling technique.</p>			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME				
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME				
RECEIVED BY LABORATORY SECTION FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	TITLE			DATE/TIME		
66 of 68					DATE/TIME		

## CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

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COLLECTOR HOGAN, JG	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND		
SAMPLING LOCATION 216-N-3	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses		SAF NO. R07-007	AIR QUALITY	15 Days / 15 Days		
ICE CHEST NO.	FIELD LOGBOOK NO. <b>HNF-N-507 3</b>	COA 122333ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE				
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. <b>N/A</b>		BILL OF LADING/AIR BILL NO. <b>N/A</b>				
MATRIX* OL = OTHER LIQUID OS = OTHER SOLID S = SOIL W = WATER	SPECIAL HANDLING AND/OR STORAGE		POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				
SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1ML85		S		<b>3-1-07 0940</b>	1X60mL G/P	Americium-241;	None
B1ML85		S			1X60mL G/P	Isotopic Plutonium;	None
B1ML85		S			1X60mL G/P	Isotopic Uranium;	None
B1ML85		S			1X60mL G/P	Strontium-89,90 -- Total Sr;	None
B1ML85		S			1X60mL G/P	Technetium-99;	None
B1ML85		S			1X250mL G	Tritium - Ion Ex (H-3)	None
B1ML86		S			1X60mL G/P	ICP/MS - 200.8 (TAL) {Ba, Cd, Cr, Mn, Sb, Zn} ICP/MS - 200.8 (Add-on) {As, Pb, Th} ICP/MS - 200.8 (Hg) {Hg}	None
<b>248</b>			<b>1025</b>				
CHAIN OF POSSESSION			SIGN/ PRINT NAMES			SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <b>J.G. Hogan</b> Fluor Hanford	DATE/TIME <b>MAR 02 2007</b>	RECEIVED BY/STORED IN <b>K. Boebs</b>	DATE/TIME <b>MAR 02 2007</b>	** Reporting format the same as GPP, Including QC. ** STL is to send a copy of chain of custody (COC) to John Trechter within 24 hours of sample receipt and copy ^CPP Sample Management mailbox. ** WSCF will send copies of COC to John Trechter and copy ^CPP Sample Management mailbox. ** The Fluor Hanford samplers shall provide copies of all field documents to Steve Trent. ** Final reports are to be uploaded into HEIS. ** Samples WILL NOT be taken using the multi-increment sampling technique.			
RELINQUISHED BY/REMOVED FROM <b>66-1006</b>	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME				
RELINQUISHED BY/REMOVED FROM <b>66-1006</b>	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME				
LABORATORY SECTION <b>66-1006</b>	RECEIVED BY		TITLE	DATE/TIME			
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD		DISPOSED BY	DATE/TIME			

Fluor Hanford Inc.

## CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

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COLLECTOR HOGAN, JG	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 216-N-3	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses		SAF NO. R07-007	AIR QUALITY	15 Days / 15 Days
ICE CHEST NO.	FIELD LOGBOOK NO. <b>HNF-N-507 3</b>	COA 122333ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. <b>N/A</b>		BILL OF LADING/AIR BILL NO. <b>N/A</b>		

MATRIX* OL = OTHER LIQUID OS = OTHER SOLID S = SOIL W = WATER	SPECIAL HANDLING AND/OR STORAGE	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)
---	---------------------------------	--

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1ML86		S		3-1-07 1025	1X60mL G/P	Chromium Hex - 7196;	Cool 4C
B1ML86		S			1X60mL aG	PCBs - 8082;	Cool 4C
B1ML86		S			1X500mL Square Bottle - Poly	Gamma Spectroscopy {Co-60, Cs-137, Eu-152, Eu-154, Eu-155}	None
B1ML86		S			1X60mL G/P	Ameridium-241;	None
B1ML86		S			1X60mL G/P	Isotopic Plutonium;	None
B1ML86		S			1X60mL G/P	Isotopic Uranium;	None
B1ML86		S			1X60mL G/P	Strontium-89,90 -- Total Sr;	None

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM <i>J.G. Hogan</i>	DATE/TIME 100 MAR 02 2007	** Reporting format the same as GPP, including QC.
Fluor Hanford	RECEIVED BY/STORED IN <i>R.B. Roberts</i>	** STL is to send a copy of chain of custody (COC) to John Trechter within 24 hours of sample receipt and copy ^CPP Sample Management mailbox.
RELINQUISHED BY/REMOVED FROM	DATE/TIME 100 MAR 02 2007	** WSCF will send copies of COC to John Trechter and copy ^CPP Sample Management mailbox.
RELINQUISHED BY/REMOVED FROM	DATE/TIME	** The Fluor Hanford samplers shall provide copies of all field documents to Steve Trent.
RELINQUISHED BY/REMOVED FROM	DATE/TIME	** Final reports are to be uploaded into HEIS.
RELINQUISHED BY/REMOVED FROM	DATE/TIME	** Samples WILL NOT be taken using the multi-increment sampling technique.

16 66 JO	RECEIVED BY	TITLE	DATE/TIME
LABORATORY SECTION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME
FINAL SAMPLE DISPOSITION			

COLLECTOR HOGAN, JG.	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 216-N-3	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses		SAF NO. R07-007	AIR QUALITY	15 Days / 15 Days
ICE CHEST NO.	FIELD LOGBOOK NO. <b>HNF-N-507 3</b>	COA 12233ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. <b>N/A</b>		BILL OF LADING/AIR BILL NO. <b>N/A</b>		

MATRIX\*  
OL = OTHER LIQUID  
OS = OTHER SOLID  
S = SOIL  
W = WATER

**SPECIAL HANDLING AND/OR STORAGE**

**POSSIBLE SAMPLE HAZARDS/ REMARKS**

Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1ML86		S		3-1-07 1025	1X60mL G/P	Technetium-99;	None
B1ML86		S			1X250mL G	Tritium - Ion Ex {H-3}	None
B1ML87		S	249	1232	1X60mL G/P	ICP/MS - 200.8 (TAL) {Ba, Cd, Cr, Mn, Sb, Zn} ICP/MS - 200.8 (Add-on) {As, Pb, Th} ICP/MS - 200.8 {Hg} {Hg}	None
B1ML87		S			1X60mL G/P	Chromium Hex - 7196;	Cool 4C
B1ML87		S			1X60mL aG	PCBs - 8082;	Cool 4C
B1ML87		S			1X500mL Square Bottle - Poly	Gamma Spectroscopy {Co-60, Cs-137, Eu-152, Eu-154, Eu-155}	None
B1ML87		S			1X60mL G/P	Ameridium-241;	None

**CHAIN OF POSSESSION**

RELINQUISHED BY/REMOVED FROM

DATE/TIME

Fluor Hanford

RELINQUISHED BY/REMOVED FROM

DATE/TIME

RELINQUISHED BY/REMOVED FROM

DATE/TIME

RELINQUISHED BY/REMOVED FROM

DATE/TIME

RELINQUISHED BY/REMOVED FROM

DATE/TIME

FINAL SAMPLE DISPOSITION

DISPOSAL METHOD

**SIGN/ PRINT NAMES**

RECEIVED BY/STORED IN

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Fluor Hanford

RELINQUISHED BY/REMOVED FROM

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FINAL SAMPLE DISPOSITION

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RELINQUISHED BY/REMOVED FROM

FINAL SAMPLE DISPOSITION

**SPECIAL INSTRUCTIONS**

- \*\* Reporting format the same as GPP, including QC.
- \*\* STL is to send a copy of chain of custody (COC) to John Trechter within 24 hours of sample receipt and copy ^CPP Sample Management mailbox.
- \*\* WSCF will send copies of COC to John Trechter and copy ^CPP Sample Management mailbox.
- \*\* The Fluor Hanford samplers shall provide copies of all field documents to Steve Trent.
- \*\* Final reports are to be uploaded into HEIS.
- \*\* Samples WILL NOT be taken using the multi-increment sampling technique.

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Of  
99 LABORATORY SECTION

RECEIVED BY

TITLE

DATE/TIME

FINAL SAMPLE DISPOSITION

DISPOSAL METHOD

DISPOSED BY

DATE/TIME

## CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R07-007-002

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COLLECTOR HOGAN, JG	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 216-N-3	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses		SAF NO. R07-007	AIR QUALITY	15 Days / 15 Days
ICE CHEST NO.	FIELD LOGBOOK NO. <b>HNF-N-507 3</b>	COA 122333ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. <b>N/A</b>		BILL OF LADING/AIR BILL NO. <b>N/A</b>		

MATRIX\*  
 OL = OTHER LIQUID  
 OS = OTHER SOLID  
 S = SOIL  
 W = WATER

**SPECIAL HANDLING AND/OR STORAGE**

## POSSIBLE SAMPLE HAZARDS/ REMARKS

Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1ML87		S	3-1-07	1232	1X60mL G/P	Isotopic Plutonium;	None
B1ML87		S			1X60mL G/P	Isotopic Uranium;	None
B1ML87		S			1X60mL G/P	Strontium-89,90 -- Total Sr;	None
B1ML87		S			1X60mL G/P	Technetium-99;	None
B1ML87		S			1X250mL G	Tritium - Ion Ex {H-3}	None
B1ML88		S	0835		1X60mL G/P	ICP/MS - 200.8 (TAL) {Ba, Cd, Cr, Mn, Sb, Zn} ICP/MS - 200.8 (Add-on) {As, Pb, Th} ICP/MS - 200.8 (Hg) {Hg}	None
B1ML88		S	250		1X60mL G/P	Chromium Hex - 7196;	Cool 4C

## CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM  
**J.G. Hogan**  
Fluor Hanford

DATE/TIME  
**1100 MAR 02 2007**

RELINQUISHED BY/REMOVED FROM

DATE/TIME

FINAL SAMPLE DISPOSITION

DISPOSAL METHOD

## SIGN/ PRINT NAMES

RECEIVED BY/STORED IN

DISPOSED BY

## SPECIAL INSTRUCTIONS

- \*\* Reporting format the same as GPP, including QC.
- \*\* STL is to send a copy of chain of custody (COC) to John Trechter within 24 hours of sample receipt and copy ^CPP Sample Management mailbox.
- \*\* WSCF will send copies of COC to John Trechter and copy ^CPP Sample Management mailbox.
- \*\* The Fluor Hanford samplers shall provide copies of all field documents to Steve Trent.
- \*\* Final reports are to be uploaded into HEIS.
- \*\* Samples WILL NOT be taken using the multi-increment sampling technique.

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## COLLECTOR

HOGAN, JG

## SAMPLING LOCATION

216-N-3

ICE CHEST NO.

ERC 96-034

## SHIPPED TO

Waste Sampling &amp; Characterization

## MATRIX\*

DL = OTHER LIQUID  
 OS = OTHER SOLID  
 S = SOIL  
 W = WATER

## SPECIAL HANDLING AND/OR STORAGE

## POSSIBLE SAMPLE HAZARDS/ REMARKS

Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1ML88		S		3-1-07 0835	1X60mL aG PCBs - 8082;		Cool 4C
B1ML88		S			1X500mL Square Bottle - Poly	Gamma Spectroscopy (Co-60, Cs-137, Eu-152, Eu-154, Eu-155)	None
B1ML88		S			1X60mL G/P	Americium-241;	None
B1ML88		S			1X60mL G/P	Isotopic Plutonium;	None
B1ML88		S			1X60mL G/P	Isotopic Uranium;	None
B1ML88		S			1X60mL G/P	Strontium-89,90 -- Total Sr;	None
B1ML88		S			1X60mL G/P	Technetium-99;	None

## CHAIN OF POSSESSION

RElinquished by/Removed From

J.G. Hogan

Fluor Hanford

RElinquished by/Removed From

DATE/TIME

RECEIVED BY/STORED IN

MAR 02 2007

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

## SPECIAL INSTRUCTIONS

\*\* Reporting format the same as GPP, including QC.

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\*\* Final reports are to be uploaded into HEIS.

\*\* Samples WILL NOT be taken using the multi-increment sampling technique.

RElinquished by/Removed From

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

RElinquished by/Removed From

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

LABORATORY SECTION

RECEIVED BY

TITLE

DATE/TIME

FINAL SAMPLE DISPOSITION

DISPOSAL METHOD

DISPOSED BY

DATE/TIME

94  
66 JO 99

Fluor Hanford Inc.

## CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R07-007-002

PAGE 8 OF 12

COLLECTOR HOGAN, JG	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 216-N-3	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses		SAF NO. R07-007	AIR QUALITY	15 Days / 15 Days
ICE CHEST NO. <i>ERC 96 - 034</i>	FIELD LOGBOOK NO. <i>HNF-N-507 3</i>	COA <i>122333ES20</i>	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. <i>N/A</i>		BILL OF LADING/AIR BILL NO. <i>N/A</i>		

MATRIX\*  
OL = OTHER LIQUID  
OS = OTHER SOLID  
S = SOIL  
W = WATER

SPECIAL HANDLING AND/OR STORAGE

## POSSIBLE SAMPLE HAZARDS/ REMARKS

Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1ML88		S		<i>3-1-07 0835</i>	1X250mL G	Tritium - Ion Ex (H-3)	None
B1ML89		S		<i>2-28-07 0730</i>	1X60mL G/P	ICP/MS - 200.8 (TAL) {Ba, Cd, Cr, Mn, Sb, Zn} ICP/MS - 200.8 (Add-on) {As, Pb, Th} ICP/MS - 200.8 (Hg) {Hg}	None
B1ML89		S			1X60mL G/P	Chromium Hex - 7196;	Cool 4C
B1ML89		S			1X60mL aG	PCBs - 8082;	Cool 4C
B1ML89		S			1X500mL Square Bottle - Poly	Gamma Spectroscopy (Co-60, Cs-137, Eu-152, Eu-154, Eu-155)	None
B1ML89		S			1X60mL G/P	Ameridium-241;	None
B1ML89		S			1X60mL G/P	Isotopic Plutonium;	None

## CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM  
*J.G. Hogan*Fluor Hanford  
RELINQUISHED BY/REMOVED FROM  
*J.G. Hogan*

RELINQUISHED BY/REMOVED FROM

RELINQUISHED BY/REMOVED FROM

DATE/TIME  
*1100*DATE/TIME  
*MAR 02 2007*

DATE/TIME

## SIGN/ PRINT NAMES

RECEIVED BY/STORED IN  
*John Trechter*RECEIVED BY/STORED IN  
*John Trechter*

DATE/TIME

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME  
*1100*DATE/TIME  
*MAR 02 2007*

DATE/TIME

DATE/TIME

DATE/TIME

RECEIVED BY/STORED IN

## SPECIAL INSTRUCTIONS

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of  
99LABORATORY SECTION  
FINAL SAMPLE DISPOSITION

RECEIVED BY

DISPOSAL METHOD

TITLE

DATE/TIME

DATE/TIME

DISPOSED BY

Fluor Hanford Inc.

## CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R07-007-002

PAGE 9 OF 12

COLLECTOR HOGAN, JG	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 216-N-3	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses		SAF NO. R07-007	AIR QUALITY	15 Days / 15 Days
ICE CHEST NO.	FIELD LOGBOOK NO. <b>HNF-N-507 3</b>	COA 122333ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. <b>N/A</b>		BILL OF LADING/AIR BILL NO. <b>N/A</b>		

MATRIX\*  
 OL = OTHER LIQUID  
 OS = OTHER SOLID  
 S = SOIL  
 W = WATER

SPECIAL HANDLING AND/OR STORAGE

## POSSIBLE SAMPLE HAZARDS/ REMARKS

Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1ML89		S	2-28-07	0730	1X60mL G/P	Isotopic Uranium;	None
B1ML89		S			1X60mL G/P	Strontium-89,90 -- Total Sr;	None
B1ML89		S			1X60mL G/P	Technetium-99;	None
B1ML89		S			1X250mL G	Tritium - Ion Ex {H-3}	None
B1ML90		S	3-1-07	0842	1X60mL G/P	ICP/MS - 200.8 (TAL) {Ba, Cd, Cr, Mn, Sb, Zn} ICP/MS - 200.8 (Add-on) {As, Pb, Th} ICP/MS - 200.8 (Hg) (Hg)	None
B1ML90		S	252		1X60mL G/P	Chromium Hex - 7196;	Cool 4C
B1ML90		S			1X60mL aG	PCBs - 8082;	Cool 4C

## CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM

J.G. Hogan

Fluor Hanford

RELINQUISHED BY/REMOVED FROM

DATE/TIME

MAR 02 2007

DATE/TIME

## SIGN/ PRINT NAMES

RECEIVED BY/STORED IN

RECEIVED BY/STORED IN

DATE/TIME

MAR 02 2007

DATE/TIME

## SPECIAL INSTRUCTIONS

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RECEIVED BY/STORED IN

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LABORATORY SECTION  
6610-96

RECEIVED BY

TITLE

DATE/TIME

FINAL SAMPLE DISPOSITION

DISPOSAL METHOD

DISPOSED BY

DATE/TIME

## CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R07-007-002

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COLLECTOR  
HOGAN, JG  
SAMPLING LOCATION  
216-N-3  
ICE CHEST NO.  
*ERC 96-034*

COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE
PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses	SAF NO. R07-007	PRICE CODE 8C
FIELD LOGBOOK NO. <i>HNF-N-507 3</i>	COA 122333ES20	AIR QUALITY
OFFSITE PROPERTY NO. <i>N/A</i>	METHOD OF SHIPMENT GOVERNMENT VEHICLE	DATA TURNAROUND 15 Days / 15 Days
	BILL OF LADING/AIR BILL NO. <i>N/A</i>	

SHIPPED TO  
Waste Sampling & Characterization

MATRIX\*  
OL = OTHER LIQUID  
OS = OTHER SOLID  
S = SOIL  
W = WATER

## SPECIAL HANDLING AND/OR STORAGE

## POSSIBLE SAMPLE HAZARDS/ REMARKS

Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1ML90		S	3-1-07	0842	1X500mL Square Bottle - Poly	Gamma Spectroscopy {Co-60, Cs-137, Eu-152, Eu-154, Eu-155}	None
B1ML90		S			1X60mL G/P	Ameridium-241;	None
B1ML90		S			1X60mL G/P	Isotopic Plutonium;	None
B1ML90		S			1X60mL G/P	Isotopic Uranium;	None
B1ML90		S			1X60mL G/P	Strontium-89,90 -- Total Sr;	None
B1ML90		S			1X60mL G/P	Technetium-99;	None
B1ML90		S			1X250mL G	Tritium - Ion Ex {H-3}	None

## SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM <i>J.G. Hogan</i>	DATE/TIME 1100	RECEIVED BY/STORED IN <i>(Signature)</i>	DATE/TIME 1100	SPECIAL INSTRUCTIONS ** Reporting format the same as GPP, including QC.
Fluor Hanford <i>(Signature)</i>	MAR 02 2007	<i>(Signature)</i>	MAR 02 2007	** STL is to send a copy of chain of custody (COC) to John Trechter within 24 hours of sample receipt and copy ^CPP Sample Management mailbox.
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** WSCF will send copies of COC to John Trechter and copy ^CPP Sample Management mailbox.
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The Fluor Hanford samplers shall provide copies of all field documents to Steve Trent.
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** Final reports are to be uploaded into HEIS.
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** Samples WILL NOT be taken using the multi-increment sampling technique.

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LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

Fluor Hanford Inc.

## CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R07-007-002

PAGE 11 OF 12

COLLECTOR HOGAN, JG	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 216-N-3	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses		SAF NO. R07-007	AIR QUALITY	15 Days / 15 Days
ICE CHEST NO.  ERC96-034	FIELD LOGBOOK NO.  HNF-N-507 3	COA 122333ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

MATRIX\*  
 OL = OTHER LIQUID  
 OS = OTHER SOLID  
 S = SOIL  
 W = WATER

SPECIAL HANDLING AND/OR STORAGE

## POSSIBLE SAMPLE HAZARDS/ REMARKS

Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1ML98		S	254	3-1-07 0610	1X250mL G	Tritium - H3 (H-3)	None
B1ML80		S	253	1345	1X60mL G/P	ICP/MS - 200.8 (TAL) {Ba, Cd, Cr, Mn, Sb, Zn} ICP/MS - 200.8 (Add-on) {As, Pb, Th} ICP/MS - 200.8 (Hg) (Hg)	None
B1ML80		S			1X60mL G/P	Chromium Hex - 7196;	Cool 4C
B1ML80		S			1X60mL aG	PCBs - 8082;	None
B1ML80		S			1X500mL Square Bottle - Poly	Gamma Spectroscopy {Co-60, Cs-137, Eu-152, Eu-154, Eu-155}	None
B1ML80		S			1X60mL G/P	Americium-241;	None
B1ML80		S			1X60mL G/P	Isotopic Plutonium;	None

## CHAIN OF POSSESSION

REMOVED FROM

Fluor Hanford

RELINQUISHED BY/REMOVED FROM

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

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of  
9  
LABORATORY  
SECTION

RECEIVED BY

TITLE

DATE/TIME

FINAL SAMPLE  
DISPOSITION

DISPOSAL METHOD

DISPOSED BY

DATE/TIME

Fluor Hanford Inc.

## CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R07-007-002

PAGE 12 OF 12

COLLECTOR HOGAN, JG	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 216-N-3	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses		SAF NO. R07-007	AIR QUALITY	15 Days / 15 Days
ICE CHEST NO. <i>ERC96-034</i>	FIELD LOGBOOK NO. <i>HNF-N-507 3</i>	COA 122333ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. <i>N/A</i>		BILL OF LADING/AIR BILL NO. <i>N/A</i>		
MATRIX* OL = OTHER LIQUID OS = OTHER SOLID S = SOIL W = WATER	SPECIAL HANDLING AND/OR STORAGE				
POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)					

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1ML80		S		3-1-07 1345	1X60mL G/P	Isotopic Uranium;	None
B1ML80		S			1X60mL G/P	Strontium-89,90 -- Total Sr;	None
B1ML80		S			1X60mL G/P	Technetium-99;	None
B1ML80		S			1X250mL G	Tritium - Ion Ex (H-3)	None

## CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM

*J.G. Hogan*

Fluor Hanford

RELINQUISHED BY/REMOVED FROM

DATE/TIME

MAR 02 2007

DATE/TIME

## SIGN/ PRINT NAMES

RECEIVED BY/STORED IN

RECEIVED BY/STORED IN

DATE/TIME

MAR 02 2007

DATE/TIME

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RELINQUISHED BY/REMOVED FROM

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

66  
of 99  
66

RECEIVED BY

TITLE

DATE/TIME

LABORATORY SECTION

DISPOSAL METHOD

DISPOSED BY

DATE/TIME

FINAL SAMPLE DISPOSITION